The Ancient City of Babylon

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Introduction

Babylon during Nebuchadnezzar II (604-562 BC) was a great city. It had been a large city since Old Babylonian times, but Nebuchadnezzar's expansion of the city and large-scale rebuilding of important buildings with good baked brick instead of the traditional unbaked mudbrick created something exceptional. Babylon now was larger than Nineveh had been and larger than any of the cities in the known world. The political and economic base for this development was of course that it was the centre of the Neo-Babylonian empire created by Nebuchadnezzar's father Nabopolassar (625–605 BC) and succeeding the Neo Assyrian empire as the main political entity in the Middle East.

An attempt for the first time to bring together the main results of the German excavations in Babylon with the main results from the Iraqi excavations there and thereby make use of the available cuneiform documentation and a selected use of the best of the classical tradition. With the help of a GIS software (QGIS) and a BIM program (ArchiCAD) the use of satellite images and aerial photos combined with inspection on the site, the historical development of the site has been studied and a digital research model of Babylon for different periods of the city's history has been created.

Only main buildings and constructions have been considered and placed in the appropriate historical and archaeological context. Part 1 includes some information about the historical development of buildings and nature in Babylon, the rivers and groundwater in Baybylon, as well as basics about the building materials used in Babylon. Part 2 discuss the city walls and city gates, introductory matters about the history, excavation and other documentations of the walls and gates. The chapter also includes presentation of the walls and gates during Nabopolassar followed by a detailed discussion of the walls and gates during Nebuchadnezzar. The Ištar gate and the area

around it with the different levels and the upper level glazed decoration have been treated separately. Detailed interpretations about the palaces, development of the main traditional South Palace and the new constructed North are discussed in part 3. Reasonable suggestions for the Hanging Gardens in the North Palace have be provided.

The temples are discussed in part 4 detailing the Marduk temple and the zikkurrat. The historical development of the four temples reconstructed on the site in Babylon on their old foundations, i.e. Nabû, Ištar, Ašratum, and Ninmaḫ temples, is discussed with indication which levels have been used for the reconstructions. The historical development of the other excavated temples, i.e. the Ninurta and Išḫara temples, are discussed in a similar way. Attention will be paid to the remains of wall decorations in the temples.

Part 1: Historical development of buildings and nature in Babylon

1.1 Historical sources for the buildings

The earliest presently known written reference to Babylon may possibly be in a late Early Dynastic text from about 2400 BC mentioning a governor rebuilding the Marduk temple. Old Akkadian year name of Šar-kali-šarri and two later copies of building inscriptions of Naram-Sîn and Šar-kali-šarri concern other temple constructions [(1)].

The German excavations registered a selection of 1190 either representative or special bricks with cuneiform inscriptions, most of them, 906, with the name of Nebuchadnezzar. About 230 other bricks had Aramaic inscriptions, alone or as addition to a cuneiform inscription [(2)]. There were 157 inscribed clay cylinders and prisms. Among the inscriptions on stone, the largest group was the almost 400 stone pavement slabs.

Royal inscriptions refer almost always to an important building where the inscription was deposited. Such inscriptions can be found on baked bricks, clay cylinders, clay prisms, clay tablets, and objects of stone, metal, etc. The far most common building material with inscription in Babylon is baked brick. The text on the baked brick was either written with a stylus on the wet not yet baked brick or produced by means of a stamp with the text in

[1] Sollberger 1985, Frayne 1993 E2.1.4.29, E2.1.5.5.
[2] Sass – Marzahn 2010.

mirror format. The inscription can in most cases be found on the main flat surface placed downwards in the wall.

More exceptional examples of inscribed building materials are stone and glazed brick. The longest royal inscription of Nebuchadnezzar found in Babylon is preserved on stone tablets in three copies [3]. The longest royal inscription dealing with Babylon was not found there but was written in two copies on rocks in Lebanon, the source of cedar wood for buildings in Babylon [4]. There are examples of stone blocks, one of them found in the Ištar Gate providing the name of the gate during the excavations (*Fig. 1.1*), and a stele with building inscriptions found in Babylon. The lower part of the north outer wall of the North Palace was constructed by means of large limestone blocks (*Fig. 1.2*).

Fig. 1.1. Large limestone block from Ištar Gate's main gate building with an inscription of Nebuchadnezzar proving the name of the gate during the excavation. September 1902. PhBab 199 (DOG, VAM photo archives).

[3] Langdon 1912 Nebuchadnezzar 15; Da Riva 2014.
[4] Da Riva 2012.

Fig. 1.2. North wall of North Palace with almost one-meter high limestone blocks. Each of the blocks of the middle level has on its upper third, just above the head of the man, a three lines inscription concerning Nebuchadnezzar's construction of the limestone wall of the palace. Top of the stone wall now 2 m under present ground water level. November 1911. PhBab 2508 (DOG, VAM photo archives).

The traditional city of Babylon with a size of about 450 ha (*Fig.1.3*) was divided approximate in the middle by an arm of the Euphrates called Araḫtu, floating in north to south direction, corresponding more or less to modern Šaṭṭ al-Ḥillah in the area. During the reign of Nebuchadnezzar II (604-562 BC), when Babylon was the centre of the large Neo-Babylonian empire, the city expanded in eastern direction and got approximate the double size, some 950 ha. In this period, there was a heavy rebuilding and construction of many of the monumental buildings on higher elevations with massive use of extraordinary good baked brick in large quantities. This may be the reason that it is from the same period that we have most of the archaeologically important finds [5].

[5] Sachs – Hunger 1988, 1989, 1996.

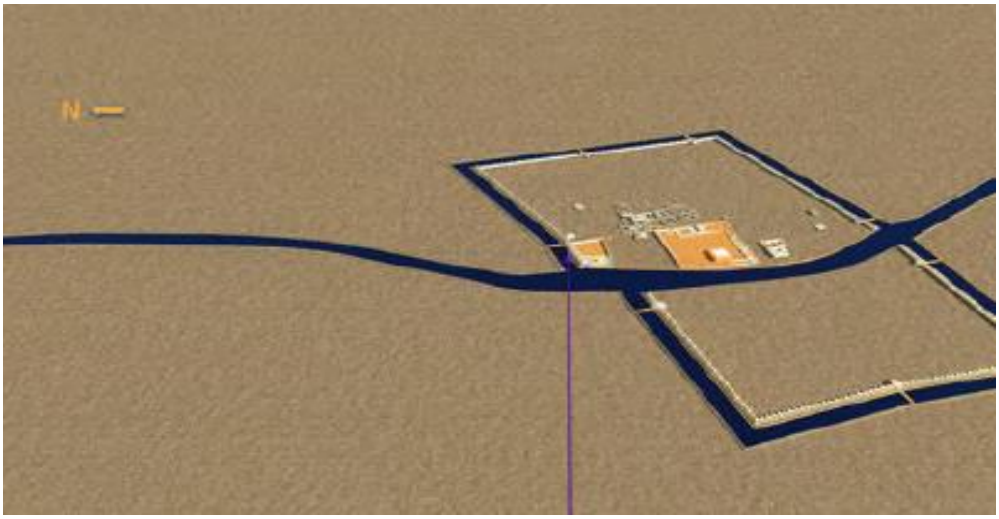

Fig. 1.3. Model: Babylon probably already from late Old Babylonian times, 17th century BC, until the reign of Nabopolassar, 625–605 BC, seen in eastern direction. The Ištar Gate marked at the north edge of the city. In this and all following figures, reddish brown walls represent baked brick and whitish grey represent unbaked mudbrick.

1.2 The river and the groundwater

Babylon being situated in a flat alluvial landscape dependent on irrigation from the river, can be expected to have problem with the groundwater. One arm of the Euphrates river system run in the middle through ancient Babylon. It was called the Euphrates or Araḫtu, which can be compared with the modern situation where the similar Euphrates' arm is called Šaṭṭ al-Ḥillah. In the flat landscape, rivers have always been changing, often gradually and limited, sometimes much more radical. To some extent this has been studied for the Babylon area, but much more could be done. Outside the city, the northern inflow changed from north to northwest, in the south where periodically it was an inland sea, there was also changes but not so well studied [(6)].

Inside Babylon, the river was slowly moving in western direction, as mentioned below. The river is now running in the middle of West Babylon cutting it into two parts and leaving the place for the old river dry so it can be used as a modern road (*Fig. 1.4*). Several other ancient water courses, either

[٦] Cole – Gasche 1998; Pedersén 2014.

the result of temporary flooding or more permanent courses, can be seen of the surface, but a main problem is how to date them [7].

Fig. 1.4. Looking south at the place for the ancient river, which was in the area of the modern road. The modern river cuts through the ancient western part of Babylon. The light green vegetation left of the road is the place for the ancient bridge over the river. Behind it, parallel with the road were quay walls now covered. Esagil temple was under the top of Amran mound to the left. March 2017.

The groundwater in Babylon is depending on the water level in the Euphrates and is sinking when moving away from the river, but increases again somewhat near water channels. Especially the main Babylon irrigation channel flowing in southeast direction in the eastern outer city since the 1920s has resulted in high water levels and sea like landscape in the southeast. There are of course some variations up and down mostly related to the water level in the river. During a long period of the old German excavations, the Hindiyah barrage was broken and the groundwater was 1913 down to −3.55 m, with continuous shovelling away water even down to −4.0 m in a few places, allowing excavations in levels now impossible to reach [8].

[٧] Lippolis 2013; Pedersén 2014.
[٨] Wetzel 1930, 55, Taf. 41.

The result of the high groundwater level, with at many places not only Neo-Babylonian but also later levels under the water level, is that early historical levels may not be possible to excavate. With few exceptions, earlier levels like the Old Babylonian are not possible to explore. Only during the period with lower water level was it possible to dug some high areas of such early periods. There is a need of a largescale study of the historical water situation in Babylon, including on site fieldwork [9].

1.3 Building Materials Used

The basic traditional building materials on the floodplain of Mesopotamia were to a large extent based on clay or mud. Most commonly used for the buildings in Babylon was the unbaked mudbrick or adobe (Arabic: لبن) with mortar and plaster of mud. Mudbrick was manufactured from mud mixed with straw (*tibnu*) put in a wooden mould, and then placed aside for a period to dry. For foundations and walls in contact with water, baked brick (Arabic: اجرة) with mortar of bitumen was in use. There is no evidence that facades of walls of baked brick had any plaster, except for temples. The baked brick was not just baked mudbrick but clay with a higher amount of sand in the composition. After forming, the dry brick was burnt in a brick oven. During Nebuchadnezzar, the use of good baked bricks heavily increased for official buildings, including massive quay walls, the rebuilt palaces, the Ištar Gate complex and even some temples [10].

The negative side of the development was that the bricks in the walls were very good building material for new constructions elsewhere. Before the German excavations started, the baked bricks walls have to a large extent been taken away down to their foundations by local brick miners in order to get good bricks for modern constructions elsewhere, e.g. in Hillah or at the Hindiyah barrage on the Euphrates.

Monumental buildings could have relief decorations in baked brick. Blue glazing was used for some of the baked brick walls. Sometimes, like at late levels of the Ištar Gate and the section of the Street of Procession north of that gate glazing and relief were combined. The reliefs were mass-produced by means of moulds for brick manufacture. During the German

[9] Bergamini 1977 was a first interesting attempt, but as it lacked fieldwork, it has on several points not been possible to follow it here.
[10] Wetzel 1930, 3–4; Sauvage 1998.

excavations about 36 000 fragments such glazed bricks were collected and registered. Later on, possibly first in the Achaemenid period, an even higher amount of quartz sand was used for some glazed brick with reliefs. A total of 680 such quartz brick fragments was excavated in Babylon [11].

Late during the reign of Nebuchadnezzar, lime-gypsum mortar (Arabic: جص) was used for upper parts of baked brick walls. This was especially noticed in the North Palace area but also in some limited upper parts of the Ištar Gate [12]. Wood could either be local or from mountains far away. Whenever possible good wood from far away was preferred, in inscriptions frequently rosewood from the east or cedar wood from Lebanon, some 800 km as the crew fly [13]. Locally available poplar wood and even date palm wood could be used for less demanding purposes. Wood was used for roofs in gates and probably roofs in other upper parts of towers, doors in gates and in other smaller openings.

Stone had to be brought to the alluvial plain from outside the plain and were mostly used for pavements of main streets and courtyards and as door-sockets. Almost 400 pavement stones and fragments of such stones were registered during the German excavations. Best availability had limestone (mountain stone), which could be, e. g., transported by boat from upstream the Euphrates. Another often used stone for the Street of Procession was reddish breccia stone. The external wall of Nebuchadnezzar's North Palace had the lower part of this wall constructed of huge limestone blocks. Pivot stones were used for all kinds of doors, for simple doors, the stone were often in secondary use. Otherwise, stone had quite a limited use for walls, mostly only construction details
like covering of water channels [14].
Metal, especially bronze or copper, was used essentially for several construction
details in connection with the wooden doors as well as for bull and dragon statues in front of city gates. Minerals for the glaze for glazed bricks were used. Both the metals and the glaze-minerals had to be brought to the area from elsewhere.

[11] Wetzel 1930, 3–4; Koldewey 1931; Sauvage 1998, Caubet – Kaczmarczyk 1998.
[12] E.g. Koldewey 1918, 11. Analysis of Babylon plaster Müller-Skjold 1957, 68-69 and Borsippa mortar Lukas 1985-1986.
[13] Langdon 1912.
[14] Koldewey 1932, 30–33; Moorey 1994, 335–347.

Part 2: City Walls and City Gates

2.1 History of the city walls and city gates

The partially excavated double city walls of unbaked mudbrick date to the reigns of the Neo-Assyrian kings, the Neo-Babylonian kings, as well as the first Achaemenid king. Quay walls of baked brick with bitumen mortar protect the mudbrick walls from the water in the river and the moats. Inscriptions of Sargon II (721–705 BC) mention the construction of the walls Imgur-Enlil and Nēmet-Enlil in addition to quay walls.8 Sennacherib (704–681 BC) destroyed Babylon including the main and front city walls in 689 BC [15]. The rebuilding of Babylon started with Esarhaddon (680–669 BC), who in addition to Esagil also built anew the main and front city walls [16]. This was followed by Assurbanipal (668–627 BC), who reconstructed the front wall Nēmet-Enlil, which had fallen into disrepair [17].

2.2 Excavations of the city walls

The German archaeological excavations directed by Koldewey 1899–1917 provided the first and most detailed examination of the remains of city walls in Babylon (*Fig. 1.5*). They examined in detail parts of the walls of the several km long remains of walls especially at the palace and the Ištar Gate, in other sections of the walls only a surface plan was traced, but for long stretches only the ridge to be seen on the surface was mapped. The results were presented in a detailed publication of the main city walls [18] and a special volume on the most magnificent city gate, the Ištar Gate [19]. In addition, the walls around the palaces, both inside and outside the main city walls, can be extracted from two volumes dealing with the palaces in Babylon [20].

In 1938, Iraqi excavations unearthed the southern larger gate room of the Ištar Gate complex. Subsequent Iraqi excavations in the late 1970s and in the 1980s of the Ištar Gate and the east inner city wall with the Marduk and Zababa Gates have included restorations and reconstructions [21].

[١٥] Grayson 2012, 2014, Sennacherib 24, 168, 223.
[١٦] Leichty 2011, Esarhaddon 60, 106.
[١٧] Frame 1995, B.6.32.1.
[١٨] Wetzel 1930.
[١٩] Koldewey 1918.
[٢٠] Koldewey 1931; Koldewey 1932.
[٢١] Abdul-Razak 1979, 1985; Kamil 1979, 1985; Damerji 2012.

On the modern surface in Babylon long stretches of the not yet excavated parts of the city walls can be seen. A long section of the partly excavated mudbrick walls is visible between the palaces. Lower levels of the Ištar Gate built with baked bricks and decorated with reliefs is standing nearby. The east inner wall has been partly reconstructed, and the inner half of the nearby Marduk Gate is reconstructed to its full, assumed height. Sections of the wall have been removed in order to make place for (illegal) modern buildings. This is especially the case with the northwest corner of the western city clearly visible on the 1960s Corona satellite images but now often missing.

Eighty-meter wide moats surrounded both the inner-city wall and the eastern outer city wall. In the 1980s, a ca. 20 m wide canal with concrete walls was built at some distance around the inner city wall on the east side of the river. The outer bank of the modern canal coincides rather well with the outer bank of the ancient 80 m wide moat. A study of the levels in Babylon essentially based on the German excavation reports was published in connection with the Italian excavations [(22)].

[٢٢] Bergamini 1977. It has only partly been possible to follow this pioneering study in the following.

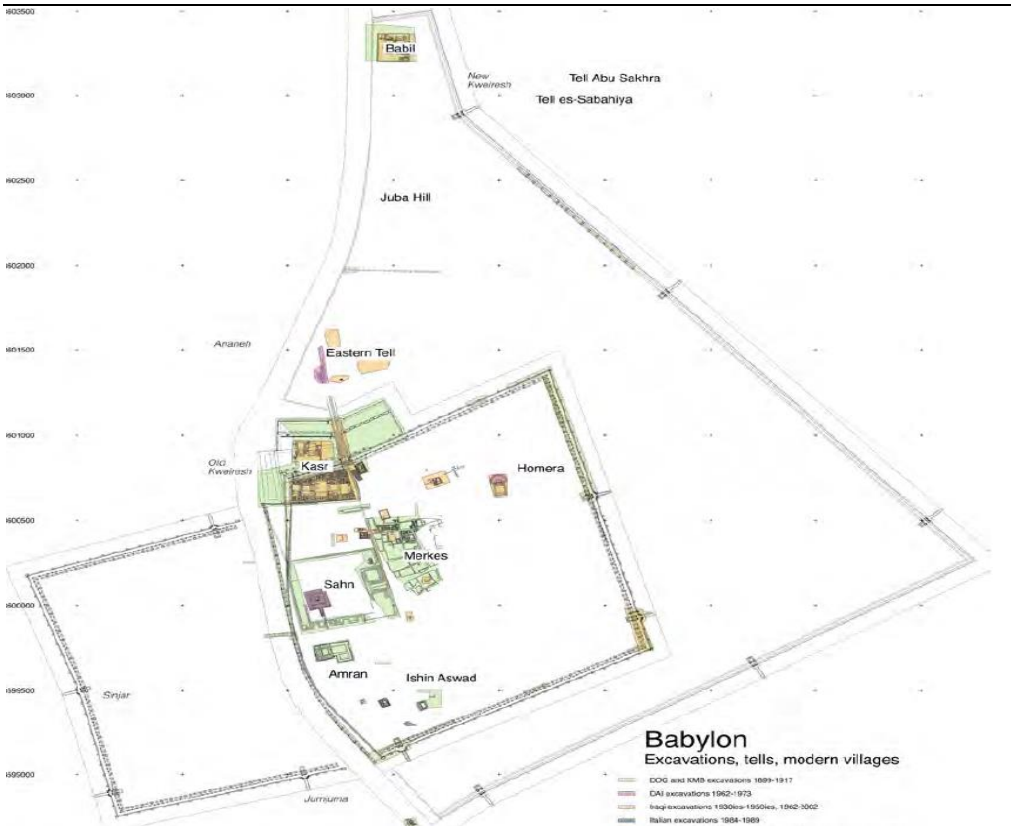

Fig. 1.5. Map of Babylon showing German, Iraqi and Italian excavations. Tells and modern villages in the Babylon area. Walls without excavation colour are unexcavated but traced in the landscape.500 m coordinate grid on map. Downloadable, see at the end.

2.3 City Walls During Nabopolassar with Earlier Remains

The city walls in Babylon at the time of Nabopolassar consisted of the double mudbrick walls Imgur-Enlil and Nēmet-Enlil with mostly a single quay wall of baked brick outside giving a total width of about 37 m. Outside the quay wall was the about 80 m wide moat (Fig. 1.6).
There are also some remains of an earlier quay wall in the northwest corner of East Babylon partly cut by the expanding South Palace. Inscriptions on bricks in the wall give a dating to the reign of the Assyrian king Sargon II (721–705 BC).56

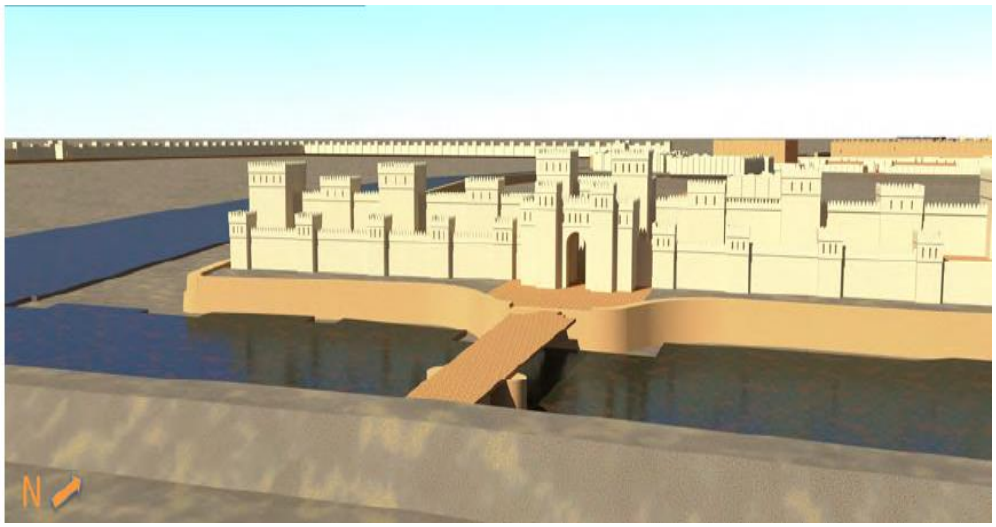

Fig. 1.6. Model: Uraš Gate during the reign of Nabopolassar, looking north. Quay walls of Nabopolassar always with rounded corners. The Euphrates river left, an 80 m wide moat in front of the gate.

2.4 City walls during Nebuchadnezzar

The city walls in Babylon at the time of Nebuchadnezzar II were partly more or less identical with Nabopolassar's but due to the expansion of the city with an outer city wall and the expansion of the palace areas the city walls got a much more advanced construction. The inner city had the somewhat modified double mudbrick walls, Imgur-Enlil and Nēmet-Enlil, now with a double quay wall of baked brick outside giving a total width of about 40 m with the about 80 m moat outside. The new outer city wall had a single mudbrick wall and a heavy quay wall a total of about 30 m with an outside 80 m moat. With the expanded place area, the quay walls nearby

went out of use and new much heavier, 12 m to perhaps 29 m thick, quay walls combined with the palace walls were constructed (Fig.1.7).

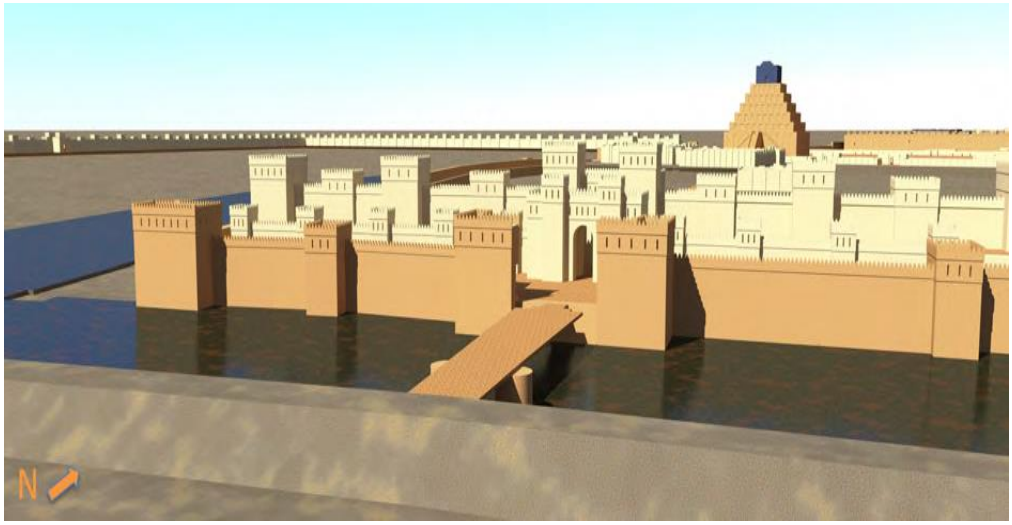

Fig. 1.7. Model: Uraš Gate during the early part of the reign of Nebuchadnezzar, looking north. Quay walls with rectangular towers added in front of the previous quay walls.

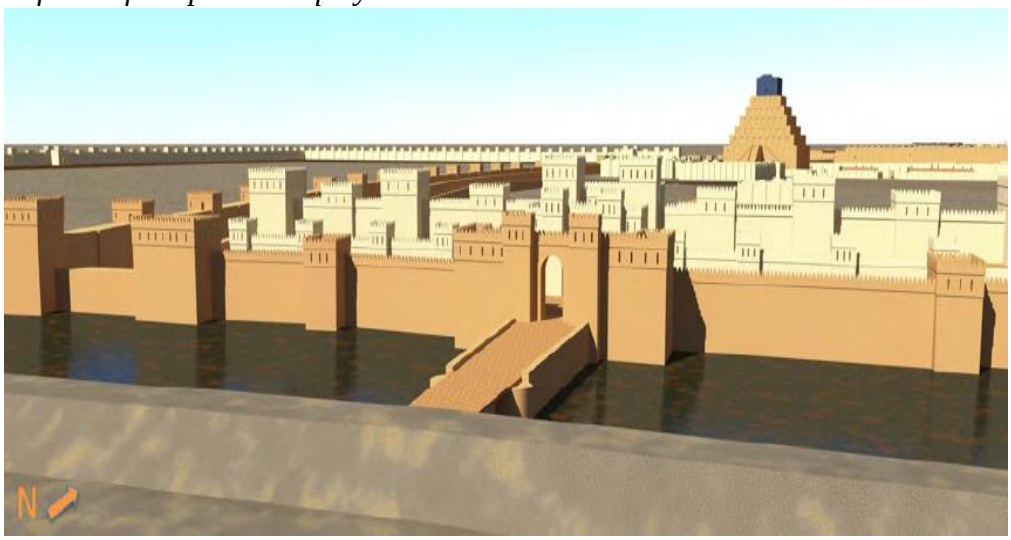

Fig. 1.8. Model: Uraš Gate during the latter part of the reign of Nebuchadnezzar or Nabonidus, looking north. Quay walls with additional fortifications. A massive extra quay wall along the river.

Total city walls: 630 780 000 bricks of all sorts, end of Nebuchadnezzar and Nabonidus

Total city walls: 472 410 000 new bricks of all sorts added during Nebuchadnezzar

The number of baked bricks used for the city walls in Babylon increased from a modest 8 730 000 during Nabopolassar to 406 140 000 during Nebuchadnezzar and Nabonidus, which is an increase with impressive 4 500%. The city walls as defined here was the largest building complex in Babylon. It must be said again that the calculations are only based on the information in the digital model and any adjustment of the walls in the model will result in other numbers, but probably not too divergent

2.5 Ištar Gate area during Nebuchadnezzar

The Ištar Gate developed during the reign of Nebuchadnezzar step by step from being a simple city gate at the north end of the city to being an advanced decorated gate with a 180 m section of Street of Procession enclosed by a North Gate, all now in an expanded palace area in the middle of the enlarged city [23].

Ištar Gate [24] was completely rebuilt with baked brick (50 000 m3 4 550 000 baked bricks) in several steps during the reign of Nebuchadnezzar and developed into a monumental gate with magnificent architecture. The mudbrick gate existing before, Nebuchadnezzar replaced with a gate in baked brick with decorations of several lines of relief bulls (*rīmu*) and dragons (*mušḫuššu*). The about 33 x 33 cm baked brick of good quality have inscriptions by means of Nebuchadnezzar stamps, giving dates to his reigns for all levels where the bricks were attested. How early in the reign of Nebuchadnezzar this size of brick started to be used has not been established, but possibly not at the real beginning of his 43-year reign. The level of the Street of Procession passing through the gate was raised several times like the gate itself and the palaces beside. The uppermost level of the gate had a facade of blue glazed brick decorated with relief bulls and dragons in coloured glazed brick. Inscriptions of Nebuchadnezzar report on the other hand especially the placing of copper (*eru*) bulls and dragons at the doorjambs (*sippu*) at the city gates [25].

[٢٣] See Pedersen 2020 for more details.
[٢٤] Koldewey 1918.
[٢٥] Langdon 1912; Da Riva 2013b, and others.

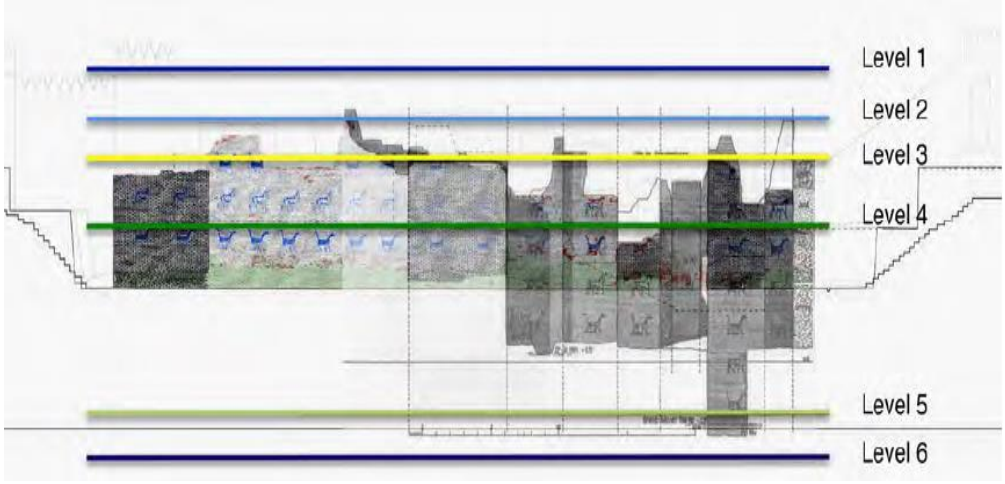

Fig. 1.9. Ištar Gate of Nebuchadnezzar II. Drawing of the inner eastern façade of the west wall of the remains of the gate. To the right, the front gate, German excavations 1902. To the left, the main gate, Iraqi excavations 1938. Background drawing by T. Grandin WMF using laser scan combined with drawing by K. Müller in Koldewey 1918, Taf. 6.

Level 1: Blue glazed gate with relief decoration +15 m in Cuneiform text attested at gate
Level 2: Blue glazed gate with flat decoration +13 m
Level 3: Relief decoration, today best preserved +11 m attested at gate
Level 4: Relief decoration +7 m in Cuneiform text attested at gate
Level 5: Relief decoration −2.5 m in Cuneiform text attested at gate
Level 6: Relief decoration −5 m in Cuneiform text

In detail, there are traces of a line of relief bulls without glazing on the baked brick gate on the assumed street level 6 below the lowest attested street level 5. Above the first attested street level 5, the gate walls of baked brick have five lines of relief animals: dragons, bulls, dragons, bulls, and dragons. Above the attested street level 4, there were a line of bulls and one of dragons. The presently best-preserved street level 3 had just one line of unglazed bulls, at the excavation found covered with gypsum. Above all this the excavation unfolded remains of a line of animals in coloured glazed brick without relief. This is the remains of a street level 2 not preserved at the gate but north of the North Gate. In the east side of the front gate were remains of a bull and on the north façade east of the gate (on the same level!) were remains of an unglazed dragon. The preserved section of the walls belonging

to level 5 has as just said five lines of animal decoration, which is 9.5 to 10.0 m. This should be the minimum height of the door opening's vertical part. The door opening is 4.6 m wide so with a 2.3 m half circle on top of the vertical section, we get a minimum height of the door opening of 11.8 to 12.3 m.

The various levels of the Ištar Gate had decoration on the walls. Nine levels of relief animals in baked brick without glazing are attested on the walls of the ruins. Each animal level is distributed on the walls with 28 animals on the southern main gate, 2 between the gates, 16 on all lower levels (except the uppermost one) of the northern front gate, as well as 31 animals on the uppermost level of the front gate, and 8 on the uppermost level at the facade of the sections connecting the gate with the mudbrick wall. Traces of another dragon seem to indicate another level of 8 animals above the uppermost bulls there. All this would give 445 relief animals in baked brick without glaze. Most of them, 253 are bulls and the remaining 191 are dragons.

It is not known how many lines of animals in glazed relief brick decorated the original gate on the uppermost street level. In Vorderasiatisches Museum Berlin the famous full-scale reconstruction has five lines of animals, in Koldewey's publication one plate show six or seven lines of animals, [26] but in the same publication there is another suggestion with eight lines of animals [27].

Part3: Babylon Palaces

3.1 South Palace

The South Palace was the traditional main palace. It was called the South Palace (German: Sudburg) by the German archaeologists it was completely rebuilt by Nebuchadnezzar, 604-562 BC. The archaeologically attested palace consisted of almost 600 rooms around 5 large and 50 small courtyards. The Throne Room was the largest room in the palace measuring 51.9 x 17.5 m or some 900 m2.

The modern concrete floor at +7.4 m now to be seen in the reconstructed palace is a bit below the middle of the at least three main levels documented in the elevation span from +2 to +13 m. The South Palace consists of an outer fortification wall about 300 m x 150 m, with the north-

[٢٦] Koldewey 1918, Taf. 19.
[٢٧] Koldewey 1918, Taf. 9.

south sides pending between 126 m in the west and 190 m in the east. The total area of the palace is 45 000 m2 or 4.5 ha [28].

German excavations were conducted in the South Palace during several periods, 1900-1901, 1903-1907, and 1912-1913, with only limited work between. Around 1980, Iraqi teams re-excavated the whole palace and made stepwise reconstructions of most of the walls on their still standing lower wall sections and foundations [29].

The layout of the palace had the five main courtyards on a line from east to west. The most important one, the Main Courtyard with the Throne Hall, is in the middle. Most of the rest of the palace was grouped around the 50 small courtyards. Quite often such a unit grouped around a courtyard could be reached by means of a street coming from the main courtyards. According to the German excavators, underground basements were only attested in the vaulted chambers in the northeast corner of the palace. Attested or on good reasons assumed staircases would allow upper floors or easy access to the roof (*Fig. 1.10*) [30].

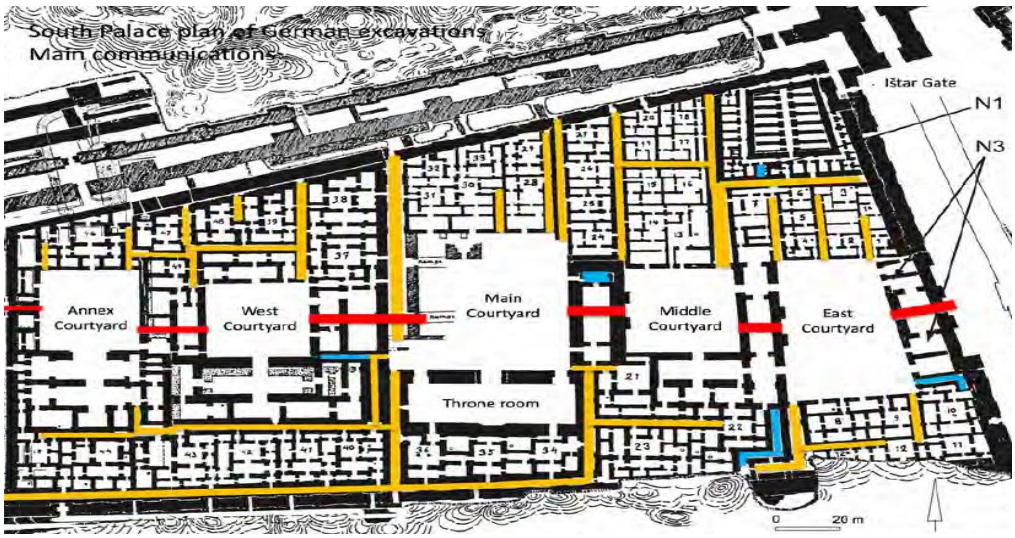

Fig. 1.10. South Palace. Plan of ground floor of German excavations with 5 large courtyards, 50 small courtyards, and some 600 rooms. Red: main communications. Yellow: other communications. Blue: staircases. N1 and N3 cuneiform archives. Pedersen 2005.

[٢٨] E.g. Abraham 2004, 235-236 No. 18, 261-262 No. 31, 309-310 No. 59, all from Darius I years 25-26.
[٢٩] Koldewey 1931; Ali 1979; Alwan 1979; Ali 1985; Alwan 1985.
[٣٠] Koldewey 1931, 71, 98..

No plaster has been attested on the external walls, and they are here treated as yellow-brown visible brick structures. The only attested decoration on these walls are the glazed bricks. The inner walls of the rooms had a white lime-gypsum plaster, which only has been preserved under the uppermost floor level in the first entrance gate room of the palace in the east (Fig. 1.10) [31]. A heavy north-south wall divided the eastern 64% of the palace with its three courtyards from the western 36% with two courtyards. Koldewey treated the east as the sections for administration and reception and the west as sections for the king and the queen.

In the northeast corner of the South Palace, Koldewey excavated some underground vaulted chambers in a kind of half basement created through not filling in a 1600 m2 area when rebuilding and raising the floor level of all other parts of the palace. In the room with the staircase leading down to the vaulted chambers, the remains of an administrative archive with some 300-clay tablet were found on the floor level. The cuneiform tablets dated to Nebuchadnezzar years 10-34, 595-577 BC were administrative documents dealing with large amounts of barley, dates, and sesame handled by various palace officials. There are registrations of incoming, storage and use [32].

The main courtyard, 55 x 61 m, or 3350 m2, in the centre of the South Palace was the largest of all palace courtyards. On the upper +12 m level of the palace, the south wall of the main courtyard in front of the Throne Room had a decoration of coloured glazed brick (Fig. 1.11). All the wall of this level had been taken away by brick miners before excavations started, but there were a number of glazed coloured brick fragments scattered around in the courtyard and nearby [33].

[٣١] Koldewey 1931, 34 Bab 43114.
[٣٢] Pedersen 2005, 111-127 N1.
[٣٣] Koldewey 1931, 84-91; Pedersen 2020.

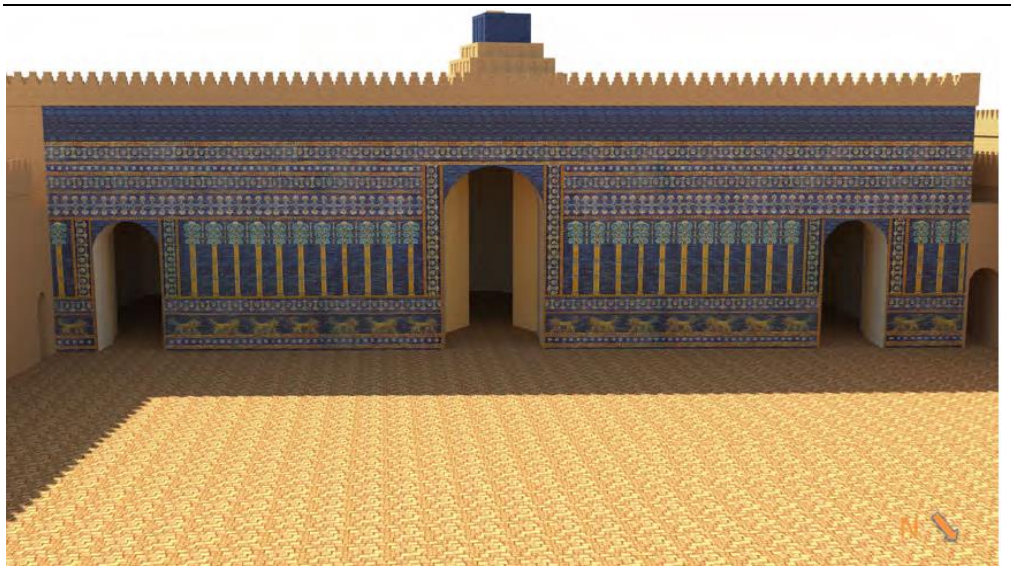

Fig. 1.11. Model: Main courtyard in front of the Throne Room, looking south, +12 m, cf. Some 53 m facade with glazed brick decoration. Zikkurrat 600 m behind with blue glazed top.

3.2 North Palace

The North Palace was a new construction of Nebuchadnezzar after completing a main rebuilding of the South Palace. The king wanted to have an appropriate palace to live in and to impress the people with the architecture, the materials, and the contents of the rooms and outside areas. Fragments of magnificent brick decorations and stone sculptures are remains of the splendour. Even a terraced garden has impressed visitors from the West.

The palace was located just north of the old city walls, north of the South Palace, partly in what previously was the old moat. During the reign of Nebuchadnezzar, the North Palace was stepwise expanded in northern direction.

The whole North Palace complex was about 73 000 m2 or 7.3 ha, with maximum side lengths 300 x 300 m. It had a terrace covering most or all of the southern part about 200 x 300 m, but due to lack of excavation the exact borders have not always been established. On this terrace the main building, about 17000 m2 or 1.7 ha, some 134 x 130 m, was standing.

This only partially preserved and partially excavated building consisted of two main courtyards with representative suites on the south side thereof.

North of the main terrace was a canal in west-east direction inside the palace area. As the top of the terrace according to the German excavators was at +15 m and the top of the quay wall of the canal had an elevation of ±0 m and a water level in the canal about −3 m, we are dealing with steep changes in elevation within a limited area some 22 m wide.41 It is here assumed that the foundations of the outer walls, called quay walls (*kāru*) in contemporary inscriptions and placed in the former moat had a base elevation of about −5 m like such walls elsewhere in Babylon.

In a section preserved by Josephus, Berossos says that Nebuchadnezzar constructed a second palace adjoining that of his father. Despite its size, it was completed in fifteen days. Within the palace he erected lofty stone terraces, planting them with all manner of tree and constructing the so called hanging gardens, because his wife, having been brought up in Media, had a passion for mountain surroundings [34].

3.3 Summer Palace

The palace at the northernmost spur of the outer city, was called Summer Palace by the German excavators because of ventilation shafts in some of the main rooms. Situated just inside the city walls, it had a strategic defence function for the outer city. It is the only known palace in Babylon outside the inner-city palace complex. It is assumed here, that the outer walls of the palace cover at least an area of 26 000 m2 or 2.6 ha, some 173 x 153 m, but especially in the east under the modern street, this has not been certified and the palace may well be larger there.

The walls are of baked brick with lime-gypsum mortar. Inside the outer wall, the rooms under the floor are built with bricks and mortar as a kind of *kisu*, whereas further inside the palace there are broken bricks on a layer of sand under the floor. An indication of widespread stone flooring perhaps in courtyards in the Summer Palace is the large number of fragments of

[٣٤] Josephus 1926 Against Apion I 135-141 citing Berossos followed by a summarized critical reference by Berossos to other Greek writing authors' opinion on a central place of Semiramis in Babylon history in I 142.
Recent studies preferring Berossos placement in the North Palace include Bichler – Rollinger 2005, Streck 2019 but they lack any investigation how it may have been laid out.

limestone floor plaster with stones of the size 66 x 66 cm having an inscription mentioning "Palace of Nebuchadnezzar" [35].

According to an inscription on clay cylinders, the Summer Palace had the name "Nebuchadnezzar may long live, the provider for Esagila". The palace was built as protection of Babylon beside the new outer city wall at its northernmost point as a strong spur (*appu dannu*) along the Euphrates with the size of 30 m (60 *ammatu*). The 30 m cannot be taken as the length here, as already mentioned, it is in reality much more, but as height from the bottom of the foundation to the top of the building, it could fit. A sand bank (*nābalu*) was created, and the foundations of asphalt and baked brick were laid in the ground water. The palace is said to be a copy of the Kadingirra palace (*ekallu miḫir ekal Kadingirra*), which is the South Palace situated in the city area called Kadingirra. The construction materials used for the Summer Palace were the same as for the South Palace. Roofsnwere of cedars (*erēnu*), doors of cedars with plating (*taḫluptu*) of bronze, thresholds (*askuppu*) and door poles (*nukuššu*) of copper [36].

Part 4: Babylon Temples

4.1 Marduk temple

The temple for Babylon's main god Marduk had the name Esagil ("House whose top is high"). It was situated in the Eridu city area of Babylon on the south side of the west-east section of the Street of Procession south of the zikkurrat area. The main temple was about 6 180 m2 with an annex east of the main entrance of 9 170 m2 making a total of 15 350 m2. The remains of the temple are in Tell Omran.

The temple was first excavated by W. Andrae in 1900, who made a large, deep pit some
20 x 20 m and 20 m deep uncovering the northern section of the central courtyard and parts of rooms north (Fig. 1.12). Then followed more extensive excavations by F. Wetzel and K. Müller in 1910-1911 by means of 29 or 30 smaller pits, often only 1 m wide in lower levels, and with tunnels between the bottom of the pits along the remains of the walls.4 It is possible that there was an outer precinct making the temple area much larger, but due to lack of excavations this has never been conclusively proven. Hence, with this procedure of excavation, only part of the central courtyard and part of the

[٣٥] Koldewey 1932, 45-46.
[٣٦] Langdon 1912, 118-121 Nebukadnezar 14.

rooms north thereof in the large pit have been properly excavated and produced content in the rooms and the courtyard.

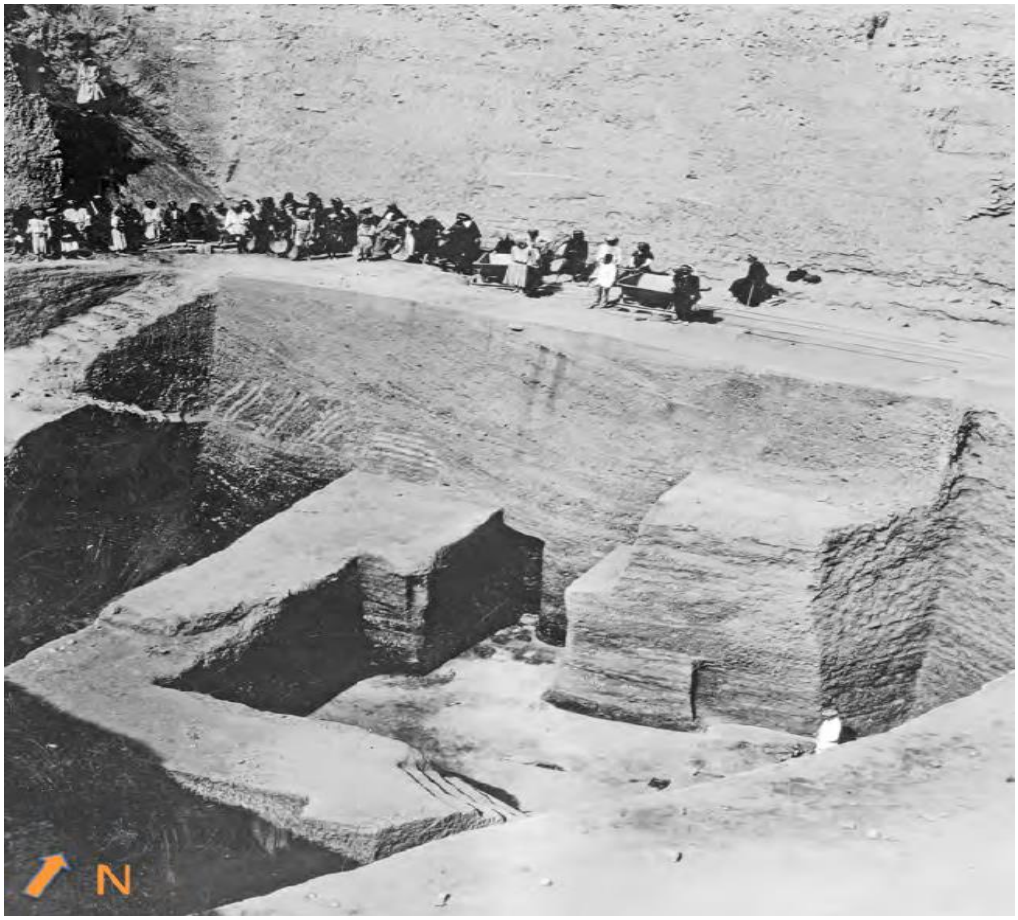

Fig. 1.12. Esagil, the large pit some 20 x 20 m and 20 m deep, October 1900. Courtyard and Rooms 6 and 12,. PhBab 86 (DOG, VAM photo archives).

The main temple has a double foundation platform of unbaked mudbrick. Outside the mudbrick walls is a 2 m wide baked brick *kisû* in order to strengthen the walls' lower parts The walls had whitish lime-gypsum plaster on the mudbrick. Inside the temple, the floor had back bitumen covering the baked brick but, in the courtyards, the floor consisted of baked brick without bitumen covering. According to cuneiform texts, Marduk's cella, Eumuša ("House of command"), was coated with ruddy gold.9

The Assyrian king Sennacherib destroyed the Marduk temple in 689 BC.13 This was followed by the rebuilding of the temple by Esarhaddon, 680-669 BC,14 and now the preserved documentation from Babylon itself starts. The work was completed by Assurbanipal, 668-627.15 Nebuchadnezzar II, 604-562 BC, rebuilt Esagil documented from numerous texts during the early years of his reign [37].

4.1.1 Zikkurrat

The zikkurrat E-temen-anki ("House, foundation platform of heaven and earth") was situated in the Eridu city area of Babylon on the west side of the Street of Procession between the Marduk temple and the South palace (German: Südburg). The 91.5 x 91.5 m (8400 m2 or 0.84 ha) and 91.5 m high zikkurrat was standing in a large courtyard surrounded by a precinct or peribolos (German: Zingel). The zikkurrat itself is taking some 5% of the total area. The modern name of this rather flat area is Sahn صحن ("plate").

In 1886, Arabs, digging wells, found in the Sahn massive good baked brick masonry, which they immediately started to remove and they even used water engines in order to lower the ground water level to get out more bricks. What they took away was the lower still standing ca. 15 m wide baked brick mantel of the zikkurrat resulting in the present deep, often water filled, cut around the about 60 x 60 m unbaked mudbrick core of the zikkurrat.

The remains of the zikkurrat were excavated by R. Koldewey and F. Wetzel in 1913 and the core and later building on top of the zikkurrat ruin again by H.-J. Schmid in 1962. The large precinct was excavated by Wetzel essentially in 1908, 1909 and 1910. Some additional upper level in the south were examined by H. Lenzen and others in 1967-1967 and 1972 and the eastern façade of the precinct was restudied by Iraqi archaeologists in the 1980s in connection with excavations at the Street of Procession.

4.1.2 Precinct

The precinct measured more than 400 x 400 m and enclosed a total area of about 180,000 m2 or 18 ha. The precinct consisted of external walls with gates, in most places with rooms inside, all of it built in unbaked mudbrick on the outside of the walls with projections/pilasters and recesses. There are

[٣٧] Langdon 1912, 72-73 Nebukadnezar 1; 90-91 Nebukadnezar 9; 124-127 Nebukadnezar 15; 18-179
Nebukadnezar 20; Da Riva 2012, 44-45.

clear traces of three different construction levels of the walls. Each rebuilding started with cutting down the walls and then a partly changed wall construction was erected often with often somewhat moved projections and change of the wall decoration by means of niches; the niche decorations attested on some levels are often at the corners or doors (Fig.1.13).

The elevations of the levels differ somewhat between different parts of the long walls and agree often with nearby street or floor levels. Level 1 with foundation at about −1.0 to +1.0 m has often decoration by means of niches. Level 2 at about +2.0 to +3.0 m has hardly any decoration of niches. Level 3 at about +4.0 to 6.0 m is often not preserved but has limited niche decorations. In connection with the raising of the levels, protective walls of baked brick were constructed in Level 2 and Level 3 as a type of *kisû* but not immediately beside the unbaked mudbrick walls but at a small distance from them. The Level 2 *kisû* has in the northwest baked brick with Nebuchadnezzar stamp. The *kisû* along the Street of Procession is raising some meters in northern direction with a maximum at +6.5 m. (*Fig. 1.13*). Presently, all the remains of unbaked mudbrick walls of the precinct are covered by earth but they are often possible to follow as stretches in the otherwise flat area.24

Fig. 1.13. East façade of the northern part of the east wall of the precinct around the zikkurrat, August 1909. Unbaked mudbrick wall of the precinct to the right followed at a small distance by a kisû when the Street of Procession was raised. Top of kisû +6.5 m. PhBab 1816 (DOG, VAM photo archives).

4.2 Nabû Temple

The temple for the god of writing Nabû *ša ḫarê* ("Nabû of storage") was called E-niggidar-kalammasumma ("House which bestows the sceptre of the land"). It was situated on the west side of the Street of Procession between the South Palace (Südburg) and the zikkurrat area in the Kadingirra city area of Babylon, in the part in modern time called Sahn. The long name, Nabû of the *ḫarû* is used to distinguish it from two other Nabû temples, in the Esagil complex in Eridu in East Babylon and in Tuba in West Babylon.66 The 1080 m2 temple was excavated and partly reconstructed 1979- 1981 by an Iraqi team supervised by Danial Ishaq. Due to a, some 4 m, raised floor level with infilling protecting the old walls, the excavators found rather well preserved white lime-gypsum wall plaster with black geometric decoration of bitumen and a large number of cuneiform school table [(38)]. According to an inscribed cylinder found inside the wall at the back of the cella, Esarhaddon (680-669 BC) rebuilt the temple after 672 BC the temple with unbaked mudbrick (*libittu*), following to the old measurements he found through excavation of its old ruins [(39)].71 Nebuchadnezzar says, he rebuilt the temple with asphalt and baked bricks [(40)].

In the reign of Nebuchadnezzar, the walls of this temple were cut down to about the middle height or just above. A protecting *kisû* of baked brick was constructed around the remains of the mudbrick walls as protection, the rooms of the temple were filled with earth and a new temple was constructed on the remains of the mudbrick walls at +8.0 m. There were two cellas in the temple, each in the south of a courtyard. The larger cella was for Nabû, the smaller for his wife Tašmetu or another goddess in this rather late period of Babylonian history. The courtyard in front of the Nabû cella as well as the cella itself and some other rooms nearby had white walls with black bands and other geometric decorations of bitumen. The same white walls with black decorations could also be found in the other cella, but the main wall in the courtyard in front of the goddess' cella was all black of bitumen.

The present reconstruction of the Nabû temple that can be seen in Babylon consists of the remains of the unbaked mudbrick walls of Esarhaddon's temple, surrounded by the lower parts of Nebuchadnezzar's baked brick *kisû*. The mud brick walls have been completed upwards with

[٣٨] Cavigneaux 1981a, Ishaq 1985, best published plan Cavigneaux 2013, 67 Fig. 1.
[٣٩] Al-Mutawalli 1999; Leichty 2011, 229-230 Esarhaddon 113.
[٤٠] Cavigneaux 1981a; Langdon 1912, 128-129; Nbk 15, Da Riva 2012, 54-55.

modern material and covered with a roof in old style, the baked brick *kisû* have been raised to a middle level. The floor is at about +3.8 m, i.e. the level of Esarhaddon's temple. The whitish lime-gypsum wall plaster with black bitumen decoration recorded on remains of the preserved walls have been completed on the reconstructed walls.

4.3 Ištar Temple

The temple for the war and love goddess Ištar of Akkad (Bēlet Akkade) had the name E-mašdari ("House of offerings"). It was situated among the private houses on the east side of the Street of Procession in the Kadingirra area, in the section now called Merkes, just some 90 m east of the Nabû temple. There were six more Ištar temples in Babylon distinguished by means of different epithets, one in the Esagil complex in Eridu, two in New Town and one in Kullab in East Babylon as well as one in Bāb-Lugalirra and one in Tuba in West-Babylon [41]. Oscar Reuther excavated the 1150 m2 temple in 1910-1911 [42]. Additional excavations and a reconstruction of the deepest level followed by Iraqi archaeologists in the years around 1980 [43]. Like the Nabû temple, the Ištar temple had the level of the floor raised, almost 2 m, which resulted in the preservation of the wall plaster on the infilled lower part of the walls. White plaster had black decoration of bitumen paint of geometric forms like the Nabû temple and the main front of the courtyard and the niche in the cella were black.

The German excavation exposed three levels with unbaked mudbrick walls, each level cut and rebuilt with more or less certain corresponding floors. The German excavators considered the first level possibly to be early Nebuchadnezzar partly because the better construction of the wall, the two higher Nabonidus. The Iraqi excavators took the first as Nabopolassar, the second Nebuchadnezzar and the third Nabonidus. What is of interest here is the very clear cutting off the first mudbrick building to the new floor level and rebuilding of the wall of Level 2 on sometimes somewhat moved positions. The second wall seems also to have been cut with some movement of the walls for next Level 4 but there is hardly any floor left (Fig. 1.12). According to the German excavators, the final fire that destroyed the temple occurred in the Achaemenid period.

[41] George 1992.
[42] Reuther 1926, 123-147.
[43] Nasir 1979; Al-Suba'ai 1985.

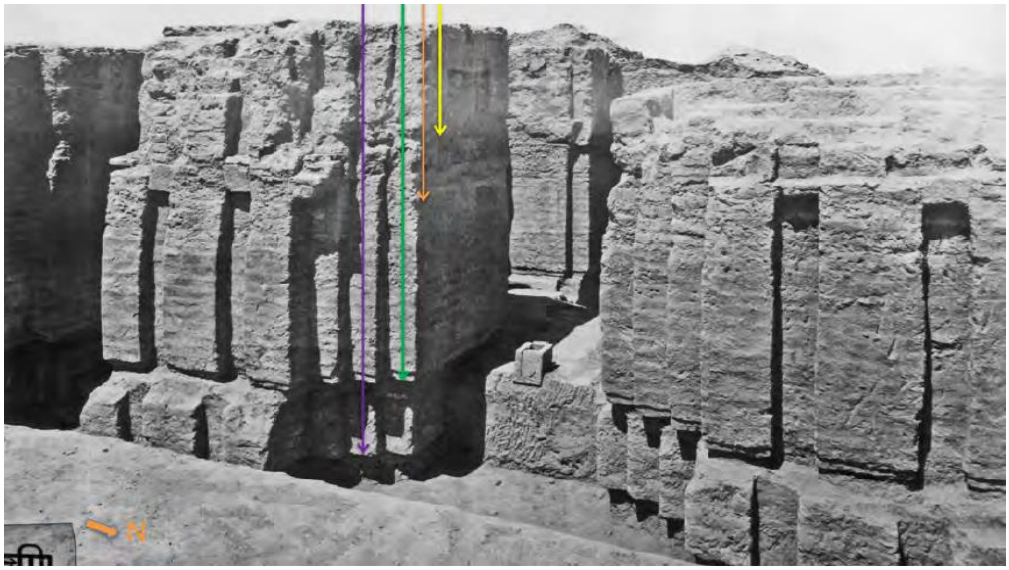

Fig. 1.12. Ištar temple, June 1911. Courtyard façade in front of cella. Foundation of temple (violet) and wall adjustments for three floor levels, +5.2 m (green), +7.0 m (orange), and +8 m (yellow). Top of wall at +10 m. PhBab 2423 (DOG, VAM photo archives).

The reconstructed Ištar temple now standing in Babylon has the floor at about the lowest exposed ancient floor level, about +5.2 m. Lower parts of exposed walls in the reconstruction have an original mudbrick core but the mudbrick facades were in bad condition and exchanged with new ones and all higher parts are of course modern in a style following the German excavators' interpretations. This can be exemplified with the repair work of the reconstruction that opened up the old core inside the modern façade. The well-preserved narrow pilaster in the north wall of the courtyard belonged to the lower level. Below is the reconstructed Ištar temple, all the surfaces that can be seen are modern and the original white colour on the walls with black decoration has not been restored (*Fig. 1.13.*). [44]

[٤٤] Nasir 1979; Al-Suba'ai 1985.

Fig. 1.13. Ištar temple, Iraqi reconstruction. The towers before the cellar entrance lack their upper parts. March 2017.

4.4 Ašratum Temple

The temple for the goddess Ašratum was called E-ḫili-kalamma ("House of the luxuriance of the land"). It was situated on the west side of the Street of Procession between the Nabû temple and the Street of Procession in the Kadingirra area, in the part in modern time called Sahn. It was excavated and partly reconstructed 1979-1981 by an Iraqi team supervised by Danial Ishaq [45].

The identification of the goddess of the temple was based on circumstantial evidence. It was the only temple in Kadingirra without a secured name and according to the Tintir text the Ašratum goddess should have a temple here [46]. However, there may be a stratigraphic problem with the not in detail published excavation results. Preliminary information seems to indicate that the temple existed on a level at +3.00 m between the two main Nabû temple levels discussed above leading to an alternative explanation of the temple as being instead a temporary Nabû temple during the main reconstruction and elevation of that temple [47].

[٤٥] Cavigneaux 2013,
[٤٦] George 1992.
[٤٧] Cavigneaux 1981a.

4.5 Ninmaḫ Temple

The temple for the mother goddess Ninmaḫ, also called Bēlet ilī, was called E-maḫ ("Exalted house"). It was situated in the palace area Kadingirra on the east side of the Street of Procession next to the Ištar Gate and the inner-city wall (Fig. 1.14). The first recorded excavation of a few rooms of the temple occurred in 1880 by Hormuzd Rassam, who wrongly treated it as part of the royal palace. Robert Koldewey excavated the 1750 m2 temple in 1900 establishing the plan and used excavated cuneiform texts to secure the identification of the building as the Ninmaḫ temple [48]. Additional deeper excavations and a reconstruction of a deeper level followed by Iraqi archaeologists in the 1940s. At Level 0 at +3.50 m, the German excavators unearthed a foundation cylinder in which Assurbanipal says that he rebuilt the Ninmaḫ temple. Together with the cylinder was a group of clay tablets dealing with building activities during year 5 of Nebuchadnezzar [49].

Fig. 1.14. Ninmaḫ temple. March 1900. Entrance in north façade. Floors at +12 m (yellow), 13.5 m (light blue), and 14.5 m (dark blue). Mudbrick altar in front. White plaster on wall up to 6 m down in pit below floor (green). PhBab 84 (DOG, VAM photo archives).

The Ninmaḫ temple given above, a number of texts telling about Nebuchadnezzar's rebuilding of the temple. This is often given in connection

[٤٨] Koldewey 1911, 4-17, pl. 2-3.
[٤٩] Frame 1995 205-206 Ashurbanipal B.6.32.5; Pedersén 2005, 135-143 N5.

with Nebuchadnezzar's construction of other temples like the Nabû *ša ḫarê* temple [50]. Details of the Ninmaḫ temple was especially given in inscriptions dealing with the *kisû* around the temple and the filling in in connection with the raising the level [51]. The brick sizes of Levels 0 to 3 agree with Nabopolassar or early Nebuchadnezzar. The reason for the large raisings of the floor of the Ninmaḫ Temple during the reign of Nebuchadnezzar was the several meters successive raising of the Street of Procession and the Ištar Gate next to the temple during the same period sizes. The Level 4 and 5 bricks are standard sized Nebuchadnezzar with his inscription.

The reconstruction of the Ninmaḫ temple that can be seen in Babylon consists of the remains of the unbaked mudbrick walls of an early Nebuchadnezzar temple just above Level 2, surrounded by the lower parts of Nebuchadnezzar's baked brick *kisû* from Level 3. The mud brick walls have been completed upwards with modern mudbricks and at the top of the external walls modern baked bricks, all covered with mud plaster. The roof is in old style, the baked brick *kisû* have been raised to a middle level and the floor is at about +9.0 m.

4.6 Ninurta Temple

The temple for the warrior and farmer god Ninurta had the name E-ḫursag-tilla ("House which exterminates the mountains").93 It was situated in the Šuanna area, in the part in modern time called Ishin Aswad, some 130 m east of the Išḫara temple. The German excavators unearthed the 1780 m2 temple in 1901. There were three cellas in the temple, the best adored middle one for the god Ninurta [52].

The temple has some rather special aspects of the plan. The main entrance with an outside double altar is from the east. The altar is very much like the one outside the Nabû temple. In the centre of the temple is an unusually large courtyard in front of the three cellas. Quite special are the south and north entrances to this courtyard from the outside. They are extremely wide, 3.5 m, so it would be possible to enter with a large procession including wagons.

The foundation of the walls of the temple is at about −0.7 m. Through comparison with other temples in Babylon and elsewhere, there was probably

[٥٠] Langdon 1912, 74-75 Nebukadnezar 1, 106-107 Nebukadnezar 13, 128-129 Nebukadnezar 15, etc.
[٥١] Langdon 1912, 84-85 Nebukadnezar 6, 204-205 Nebukadnezar 43.
[٥٢] Koldewey 1911, 25-33, Blatt 2-5, Taf. 6-7.

a first Level 0 floor at about ±0.0 m or at least it may have been planned to be, even if no remains have been found in the small area excavated on this depth. The first attested floor of Level 1 at +2.4 m has baked bricks 31 x 31 or 32 x 32 cm without inscriptions [53].

According to six clay cylinders some of which were found under the floor of Level 1, Nabopolassar says that a previous king had not completed the construction work at the Ninurta temple, but that he has now finished the work with roofing and gates.96 This could be understood as if the lower Level 0 was the not finished temple, perhaps from Esarhaddon or Assurbanipal. The floor of Level 1 belongs to the temple of Nabopolassar.
There was white wall plaster on some places with black bitumen decoration, especially around the niches in the two large cellas. All floors including the courtyard were covered with asphalt except the uppermost one [54].

4.7 Išḫara Temple

The temple for the mother goddess Išḫara was called E-šasurra ("House of the womb"). It was situated in the Šuanna area, in the part in modern time known as west Ishin Aswad or southeast Amran, some 130 m west of the Ninurta temple. As no god was possible to secure for the temple during the excavation, it was first called West-temple, then in the publication the Z-temple [55]. Later on, it was wrongly called the Gula temple, something that should be avoided. The correct designation as the Išḫara temple was established according to the cuneiform text *Tintir*, the Topography of Babylon [56]. The German excavators unearthed the 1710 m2 temple in 1901-1902. The temple is now covered by earth and the contours of it can only be seen as a lower area in the terrain.

4.9 Temples in the New Town area in East Babylon

In the New Town (*ālu ešše*) area, the *Tintir* text documents three temples. This is the northeast section of east Babylon, inside the northeast corner of the city walls.
The throne-dais (*parakku*) of the god *Nabû*, named E-uru-nanam ("House, the very city") was counted among the temples in the area.

[٥٣] Koldewey 1911, 25-33, Blatt 2-5, Taf. 6-7.
[٥٤] Koldewey 1911, 27.
[٥٥] Koldewey 1911, 18-24, Taf. 5.
[٥٦] George 1979, 229; George 1992, 59, 314-316.

The temple goddess *Bēlet-Eanna* (or Ištar of Eanna) called E-kituš-girzal ("House, abode of joy") was situated in the New Town area on the canal bank at the boarder to Kullab, according to *Tintir*, tablet 5, and private documents.

The temple goddess *Ištar-of-the-Stars* (Ištar *kakkabī*) named E-anda-saa ("House which rivals heaven") was also situated in the Newtown area.

4.9.1Temples in the Kullab area in East Babylon

In the Kullab area, the *Tintir* text lists four temples. This is the middle part of the east half of east Babylon, west of the Marduk Gate.

The temple of the moon god *Sîn* had the name E-gišnu-gal ("House of the great light") (old Ekišnu- gal) has a long recorded history. Hammurapi year 3 records the dedication of a throne, *parakku*, and Samsuiluna year 5 records a throne of gold. Abī-ešuḫ in year 8 rebuilt the temple, in year 16 dedicated a statue, and in year 28 a copper statue. Nebuchadnezzar II rebuilt the temple, which survived into the Seleucid period and is mentioned 133 BC in the Astronomical Diaries [57].

The temple of the goddess *Šarrat-Larsa* (or Ištar of Larsa) called E-mekilib-urur ("House which gathers all the me's") was situated in the Kullab area. Other Ištar temples were situated in Eridu, Kadingirra and New Town in East Babylon, as well as in Bāb-Lugalirra and Tuba in West Babylon.

The temple of the god *Pisangunuk* E-ur-gubba ("House which makes firm the oracles") was situated in the Kullab area. Another temple of the same god was in Kumar in West Babylon.The temple of the god *Lugalbanda* E-sag ("Foremost house") was situated in the Kullab area.

4.9.2 Temples in the Tê area in East Babylon

The *Tintir* text lists three temples. This is the southeast part of the east half of east Babylon, west of the Zababa Gate, and the lowest city area in Babylon presently sometimes under water.The throne-dais (*parakku*) of the *Igigi* gods named E-dur-kuga ("House, pure abode") was listed in the Tê area.

The throne-dais (*parakku*) of the *Anunnaki* gods called E-ka-gula ("House of the great gate") was also listed among the temples.

[٥٧] Sigrist and Damerow 2001; Langdon 1912 106-107 Nebukadnezar 13, 128-129 Nebukadnezar 15; Sachs – Hunger 1996, 216-217.

The temple of the goddess *Nanāy* with the name E-me-urur ("House which gathers the me's") was among those in the Tê area.

4.9.3 Temples in the Bāb-Lugalirra area in West Babylon

In the Bāb-Lugalirra area, the *Tintir* text lists three temples. This area is the north part of west Babylon, south of the Enlil Gate, in southern direction from the southern part of the modern Babylon Conference Centre and in western direction over the modern river in western direction.

The temple of the god *Nuska* named E-nun-maḫ ("House of the exalted prince") was situated in the Bāb-Lugalirra area near the border to Kumar according to *Tintir*, tablet 5.

The temple of the goddess *Bēlet-Ninua* (or Ištar of Ninua) called E-gišḫur-ankia ("House of the ordinances of heaven and earth") was situated in the Bāb-Lugalirra area. Esarhaddon mentions the temple in connection with restoration of divine statues [58]. It is mentioned in 322 BC and again in 171 BC [59]. Other Ištar temples were in Eridu, Kadingirra, New Town and Kullab in East Babylon, as well as in Tuba in West Babylon.

The temple of the god *Šara* named E-bur-sasa ("House of beautiful jars") was also situated in the Bāb-Lugalirra area.

4.9.4 Temples in the Kumar area in West Babylon

In the Kumar area, the *Tintir* text lists seven temples. This is the middle part of west Babylon, from the ridges on the east side of the modern river all the way to and including Sinjar village.The temple of the god *Bēl-mātāti* (Lord of the Countries) or Enlil with the name E-namtila ("House of life") has a long recorded history in Babylon. Hammurabi refers to the temple as a warehouse of Enlil. Year formula for Ammiditana, Ammiṣaduqa, and Samsu-ditana are dealing with statues and furniture for the temple. Probably also Burnaburiaš is involved [60].

The temple of the god *Ea* named E-eš-maḫ ("Exalted house") was a landmark in the Kumar area according to *Tintir*, tablet 5. Another temple of Ea was in Eridu in East Babylon.

The temple goddess *Belili* called E-ka-dimma ("House which creates …") was situated in the Kumar area near the border.

[٥٨] Leichty 2011, 108 Esarhaddon 48, 112 Esarhaddon 51.
[٥٩] Sachs – Hunger 1988, 226-227; Sachs – Hunger 1989, 458-459.
[٦٠] Sigrist and Damerow 2001.

The temple of the god *Amurru* with the name E-me-sikilla ("House of the shining me's") was situated in the Kumar area. Another temple of Amurru was in Eridu in East Babylon.The temple of the sun god *Šamaš* named E-diku-kalamma ("House of the judge of the land") has a long history. Known during the Old Babylonian period with Abī-ešuḫ and Apil-Sîn, who in year 16 constructed a throne dais. Nebuchadnezzar rebuilt the temple with asphalt and baked brick according to some inscriptions [61].

The temple god *Pisangunuk* called E-esir-kalamma ("House of the street of the land") was situated in the Kumar area. Another temple of Pisangunuk was in Kullab in East Babylon.The temple for the god *Adad* named E-namḫe ("House of plenty") was situated in the Kumar area.

Well attested in the Old Babylonian period with Sumu-la-El rebuilding, Hammurapi year 28 rebuilding, Samsu-iluna year 27 image of silver, Abī-ešuḫ year 26 lightening forks of gold and silver, and Ammiṣaduqa. Mentioned during Nebuchadnezzar I and rebuilt during Nebuchadnezzar II [62]. Another temple of Adad was in Eridu in East Babylon.

4.9.5 Temples in the Tuba area in West Babylon

In the Tuba area, the *Tintir* text documents three temples. This is the south part of west Babylon, north of the Šamaš Gate in the north part of the modern Jumjuma village.

The goddess *Bēlet-Eanna* (or Ištar of Eanna) temple called E-kituš-garza ("House, abode of the regulations") was situated in the Tuba area. Nebuchadnezzar II rebuilt the temple said to be located at the outer corner of the city wall (*tubqat dūri*) [63]. Other Ištar temples were situated in Eridu, Kadingirra, New Town and Kullab in East Babylon, as well as in Bāb-Lugalirra in West Babylon.

The temple of the goddess *Gula* was called E-sa-bad ("House whose ear is open"). Esarhaddon mentioned the temple and Assurbanipal rebuilt it [64]. Nebuchadnezzar II rebuilt with asphalt and baked bricks according to some inscriptions, and made golden furniture and pairs of dogs of gold, of silver and of copper to stand on pedestals (*kigallu*) in its gates [65].The temple

[٦١] Sigrist and Damerow 2001; Langdon 1912, 128-129 Nebukadnezar 15; Da Riva 2012, 54-55.
[٦٢] Sigrist and Damerow 2001; Frame 1995 B.2.4.1 purchased by the German excavations; Da Riva 2012, 54-55.
[٦٣] Da Riva 2012, 54-55.
[٦٤] Novotny – Jeffers 2018, 275 Ashurbanipal 13.
[٦٥] Langdon 1912, 128-129 Nebukadnezar 15; Da Riva 2012, 54-55.

survived into the Parthian period about 90 BC as is clear from the Raḫimesu archive and related texts [66]. Another temple of Gula was in Eridu in East Babylon.

The god *Nabû* had the temple E-šiddu-kišarra ("House of the director of the universe") in the Tuba area. Other temples of Nabû were situated in Eridu, Kadingirra and New Town in East Babylon.

4.9.6 Temple of New Year Festival

Some additional temples not mentioned in *Tintir* have been recorded in other cuneiform texts. The most well-known is the E-siskur ("House of the sacrifice"), the temple for the *akītu* festival, the New Year festival, situated outside the Inner City in northern direction. The site has so far not been securely identified, but see Section 7.4 for a discussion.

Conclusion

Overall, one of the best ways, or perhaps even the best way, to preserve something for the future would be to cover it and built something above it, something that is not destroying too much of the old that is below. There are some important examples of this principle uncovered during excavations in Babylon. Buildings and streets have been raised or constructions moved sideward leading to well protected structures, façades, and surfaces, which during other circumstances would not have been so well preserved or preserved at all.

The double mudbrick city walls and even the double baked brick quay walls between the South and the North Palace near the Ištar Gate were found standing high in extraordinary good shape compared with other sections of the walls. When constructing the North Palace outside the old city, the city walls no longer had any protective purpose here and may have been more or less completely infilled and levelled on a high elevation resulting in the preservation of the walls standing high.

Several of the temples have got the floor level raised considerably, especially due to raised street level nearby. This was mostly accompanied together with the addition of an outside strengthening wall, a *kisû*. The Nabû

[٦٦] van der Spek 1998.

temple and the Ištar temple were rebuilt on a higher level. Between the old and the new floors, there were rather well-preserved white lime-gypsum plaster with black bitumen decoration. The situation was similar for the Ninmaḫ, Ninurta and Išḫara temples.

The most common building materials were based on clay or mud, either in the form of unbaked mudbrick, mud mortar and mud plaster, or in the form of baked brick. Even if one type of material dominated, there was almost always a combination of different materials both based on clay and other material. Most of all building constructions in the area were traditionally made of unbaked mudbrick. This was the situation for the private houses, the city walls, palaces, and other official buildings from Old and Middle Babylonian periods until Parthian and Sasanian periods. There were always limitations, all constructions in contact with water had to be of baked brick, floor, streets, quay walls, water canals and channels. We have very little information about upper sections of walls and roofs.
In the Neo-Babylonian period especially during the reign of Nebuchadnezzar, this changed and many of the official buildings were constructed with good baked bricks instead of unbaked mudbrick.

The palaces were completely rebuilt with baked bricks, and the same for the Ištar Gate. The strengthening, underground side walls, the *kisû*, were regularly made of baked bricks. Even temples started to be rebuilt with baked bricks. Bitumen was used as mortar for baked brick constructions at least in lower parts of buildings. In upper parts lime-gypsum mortar was more common later in the reign of Nebuchadnezzar. The baked bricks especially of Nebuchadnezzar were of good quality and also possible to get out of the walls due to most types of mortar used. Much of these baked brick walls were later taken down by brick miner so the bricks could be reused elsewhere on a large scale. Baked bricks with decoration in the form of reliefs and glazing is treated.

The baked bricks in Neo-Babylonian Babylon were essentially of two sizes. The smaller bricks were 31 x 31 cm and the larger were 33 x 33 cm. The smaller must be older as they were found in lower parts of constructions with the larger on the top. The larger are regularly stamped with Nebuchadnezzar inscriptions and must be dated to his reign. The smaller are usually without inscriptions, only a limited number of such bricks and only in the quay walls have inscriptions of Nabopolassar. The German excavators

considered the small without inscription to be either from the reign of Nabopolassar or the early part of the reign of Nebuchadnezzar.

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