Babylon: The Great City

- Main buildings and streets
- German and Iraqi excavations
- Reconstructions and a digital model
- Cuneiform documents and history

*Babylon: The Great City* is a richly illustrated advanced introduction to and study of the German and Iraqi excavations in Babylon. The excavated inscriptional materials have been used in the interpretation of the evidence. The book is based on many years of study of the finds and of the documentation from the excavations along with repeated inspections of all the visible ruins in Babylon. A digital model of the city and integrated GIS work have been used to analyse and test the interpretations as well as support the understanding of the site. The modern history of the site is discussed including the modern reconstructions.

The book could be used both as a modern scholarly study of the UNESCO World Heritage Site and as an advanced guidebook for serious visitors to Babylon itself.

Olof Pedersén is Professor Emeritus of Assyriology at Uppsala University in Sweden. He has been studying Babylon for more than 20 years and written several articles and a 2005 book about the city, *Archive und Bibliotheken in Babylon: Die Tontafeln der Grabung Robert Koldewey's 1899–1917*.

www.zaphon.de
Babylon
The Great City

Olof Pedersén

Zaphon
Münster
2021
With thanks to
State Board of Antiquities and Heritage
World Monuments Fund
Vorderasiatisches Museum
Deutsche Orient-Gesellschaft
Deutsches Archäologisches Institut

Olof Pedersén: Babylon. The Great City

© 2021 Zaphon, Münster  (www.zaphon.de)
All rights reserved. Printed in Germany. Printed on acid-free paper.

ISBN 978-3-96327-136-6 (Book)
ISBN 978-3-96327-137-3 (E-Book)

Front cover: Babylon. Partly reconstructed South Palace (middle and right) and North Palace (left). Greek theatre in the background. View from the modern presidential palace. Photo: Pedersén, November 2019.
Contents

Abbreviations ................................................................................. 6

Preface ......................................................................................... 7

1 Babylon: General Introduction ..................................................... 9
   1.1 Introduction ................................................................. 9
   1.2 Archaeological sources for the buildings ......................... 12
   1.3 Historical sources for the buildings .......................... 16
   1.4 The river and the groundwater ................................. 23
   1.5 Critical questions .................................................... 24
      1.5.1 Correctness of documentation .......................... 25
      1.5.2 Heights of walls ................................................ 28
   1.6 Building materials .................................................... 33

2 Babylon: City Walls and City Gates .............................................. 39
   2.1 Introduction ................................................................. 39
      2.1.1 History of the city walls and city gates ................ 39
      2.1.2 Excavations of the city walls ............................. 45
      2.1.3 Texts and pictures dealing with city walls ........... 46
      2.1.4 Layout and construction of the city walls ........... 51
   2.2 City walls during Nabopolassar’s reign, with earlier remains ... 55
   2.3 City walls during Nebuchadnezzar’s reign ...................... 59
      2.3.1 The mudbrick walls ............................................ 59
      2.3.2 The baked brick walls ....................................... 61
   2.4 The Ištar Gate area during Nebuchadnezzar’s reign ....... 71
   2.5 City walls after Nebuchadnezzar ................................ 80
   2.6 Full-scale reconstructions in Berlin and Babylon ........... 82
   2.7 Amounts of building materials for the city walls ........... 87

3 Babylon: Palaces ............................................................................. 89
   3.1 Introduction ................................................................. 89
3.2 South Palace 92
  3.2.1 The older South Palace 95
  3.2.2 South Palace: Entrance and East Courtyard area 99
  3.2.3 South Palace: Middle Courtyard area 103
  3.2.4 South Palace: Main Courtyard area 103
  3.2.5 South Palace: West Courtyard area 106
  3.2.6 South Palace: Annex Courtyard area 108
  3.2.7 South Palace: Discussion 110
3.3 North Palace 112
  3.3.1 North Palace: The terraces 114
  3.3.2 North Palace: Water installations 118
  3.3.3 The North Palace and the Gardens 122
3.4 West Fortification 130
3.5 East Fortification 132
3.6 The central palace area 132
3.7 Summer Palace 135

4 Babylon: Temples ................................................................. 139
  4.1 Introduction 139
  4.2 Marduk temple 142
  4.3 Ziggurat 153
    4.3.1 The precinct 153
    4.3.2 The ziggurat 155
    4.3.3 Amounts of building materials for the ziggurat 164
  4.4 Other temples in the Eridu area according to cuneiform texts 166
  4.5 Nabû temple 167
  4.6 Ištar temple 174
  4.7 Ašratum temple 180
  4.8 Ninmaḫ temple 181
  4.9 Ninurta temple 190
  4.10 Išḫara temple 193
  4.11 Temples in the unexcavated areas of Babylon 196

5 Babylon: Main Streets ........................................................... 201
  5.1 Introduction 201
  5.2 The Euphrates bridge 204
  5.3 West–east Processional Way 206
  5.4 South–north Processional Way: Southern stretch 208
  5.5 South–north Processional Way: Missing section 217
  5.6 South–north Processional Way: Outside the South Palace 220
  5.7 South–north Processional Way: Through the Ištar Gate 223
  5.8 South–north Processional Way: Outside the North Palace 226
5.9 Streets in residential areas 232

6 Babylon: Residential Buildings .................................................. 237
   6.1 Introduction 237
   6.2 Old Babylonian and Middle Babylonian private houses 242
   6.3 Neo-Babylonian private houses 245
      6.3.1 German excavations in Merkes 246
      6.3.2 Iraqi excavations in Merkes 250
      6.3.3 Iraqi excavations north of Merkes 252

7 Babylon: Late Buildings ........................................................... 257
   7.1 Introduction 257
   7.2 Hellenistic and Parthian theatre 257
   7.3 Parthian colonnaded street 264
   7.4 Large Parthian building 266
   7.5 Sasanian fortification above the ziggurat ruins 268
   7.6 Sasanian fortification above the Summer Palace ruins 269

8 Babylon: Discussion and Conclusions ......................................... 271
   8.1 Introduction 271
   8.2 Construction materials 273
   8.3 Building structure 276
   8.4 Surface decoration 278
   8.5 Building documentation 279
   8.6 Elevations and periods 282
   8.7 Reconstructions in Babylon 286
   8.8 Future 287

Bibliography .................................................................................. 289
   Digital resources 302

Appendix: Periods and Rulers ...................................................... 303
Abbreviations

a.s.l. above sea level. The used local German elevations have ±0.0 m = 25.5 m a.s.l.
Bab Babylon excavation number, DOG – KMB excavations
Bab Ph Babylon excavation photo, DOG – KMB excavations
BDWG Babylon Documentation Work Group at SBAH Babylon
BIM Building Information Modelling
B Ph Babylon excavation photo, DAI excavations
DAI Deutsches Archäologisches Institut, Orient Abteilung, Berlin
DOG Deutsche Orient-Gesellschaft, Berlin
EŞEM Eski Şark Eserleri Müzesi, Istanbul
GIS Geographical Information System
KMB Königliche Museen Berlin, later SMB
SBAH State Board of Antiquities and Heritage in Iraq
SMB Staatliche Museen zu Berlin
UCL University College London
UTM Universal Transverse Mercator coordinate system, zone 38N, coordinates are measured as eastings (E) and northing (N) in meters
VAM Staatliche Museen zu Berlin – Vorderasiatisches Museum
WGS 84 World Geodetic System 1984
WMF World Monuments Fund
Preface

When working in Babylon with the World Monuments Fund and State Board of Antiquities and Heritage in Iraq, I discovered that there was a great need to bring the results from the German and Iraqi excavations together into a unified interpretative system. This volume attempts to place as many as possible of the various excavations in Babylon on the same maps, using the same elevation system. This allows the clarification of some of the 50- or 100-year-old questions about the findings and also about the reconstructions, both in Berlin and in Babylon. Digital methods are also employed in the study and presentation of the archaeological and textual evidence known so far, via a research digital model of Babylon. This is a preliminary attempt, and it is hoped that others will be inspired to continue with both general surveys and more detailed work.

For the work in Babylon during a number of extended visits from 2015 onwards, the following institutions are kindly thanked for support, use of material, and permissions: the State Board of Antiquities and Heritage in Iraq (SBAH), and the World Monuments Fund (WMF). It has been a privilege to work with the WMF as a consultant for historical and archaeological questions in connection with the conservation and restorations in Babylon. This work would not have been possible without the kind support of the Iraqi Ministry of Culture, the SBAH in Baghdad and the SBAH in Babylon province. I also wish to thank previous and present generations of Iraqi colleagues, who kindly supported several visits to the city from my first visit in 1979 onwards.

This study also has a background in a reworking of the documentation and the finds from the German excavations in Babylon. In 2005, I published the first results of the archaeological context of the archives and libraries with cuneiform texts excavated in Babylon. Work has continued and included all types of finds from the excavations. In recent years, there have been two preparatory Babylon projects with the Vorderasiatisches Museum Berlin (VAM) and Freie Universität Berlin together with Deutsche Orient-Gesellschaft (DOG). The following institutions are kindly thanked for support, use of material, and permissions for this research: DOG; Deutsches Archäologisches Institut, Orient-Abteilung (DAI); Freie Universität Berlin, Excellence Cluster Topoi; Uppsala University; and VAM Berlin. Four generations of directors and curators of the VAM have made the work possible.

For years there has been a lack of up to date published photographs illustrating the
various findings in Babylon except for a limited number of areas of mainly touristic interest. Here, I have endeavoured to supply some basic, up-to-date illustrations of the landscape, excavations, remains, findings, and reconstructions in Babylon itself and in museums, alongside digital reconstructions. All photographs and maps in this book that are marked with my name can be freely copied and used without any further permission, so long as a credit is given to the source. Downloads at better resolutions are available for some images, as indicated at the end of the Bibliography.

New measurements recorded in the following pages have been taken with the permission of the SBAH, mostly by the Babylon Documentation Work Group (BDWG) or sometimes by the WMF. Future, more detailed work by others will, it is hoped, give more precise details and a fuller coverage of the complete ancient city area.

Parts of the content of the book have been presented previously during lectures at the SBAH in Babylon, Babylon University in Hillah, VAM in Berlin, DOG in Berlin and in other places. For these lecturing opportunities, and for all discussions and suggestions from various colleagues, I like to express my sincere thanks. I also thank sincerely the colleagues who have given help and advice during the production of the book.

The Carlo Landberg foundation at Uppsala University has contributed to the printing costs.

The following overview is, in some ways, preliminary, and there are many more aspects of this great city that remain for others to study. Babylon is, to a large extent, still mostly unknown, hidden under earth and groundwater. The book was first planned as a teaching tool for young Iraqi archaeologists to help them to learn about the great excavations of previous generations, and their interpretations. Of course, there may be a wider international group of readers interested in Babylon: in its heyday, during the reign of Nebuchadnezzar II, the largest city in the world; later boasting two Wonders of the World (the City Walls and the Hanging Gardens); and since 2019 a UNESCO World Heritage Site.

This book is published both in print and as a download. The printed book is best for a comprehensive overview. The downloadable pdf is enlargeable (to view pictorial details) and searchable (in lieu of an index).
1 Babylon: General Introduction

Abstract

Some general questions of importance for the following study are outlined.

1.1 Introduction

Babylon during the reign of Nebuchadnezzar II (604–562 BC) was indeed the great city. It had been a large city since Old Babylonian times, but Nebuchadnezzar’s expansion and large-scale rebuilding 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 basis 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), which had succeeded the Neo-Assyrian empire as the main political entity in the Middle East (Figs. 1.1, 1.2).

This volume attempts to bring together, for the first time, the main results of both the German and Iraqi excavations in Babylon, and also to make use of the available cuneiform documentation and a selection of the best of the classical tradition. With the help of a Geographical Information System (GIS) software and a Building Information Modelling (BIM) program, using satellite images and aerial photos, combined with on-site inspection, 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. This digital model is used to test the feasibility of specific measurements of the construction and to calculate the amounts of selected construction materials; their implications can then be discussed.¹

Only the main buildings and constructions will be considered here, and placed in the appropriate historical and archaeological context. This is not an attempt to cover everything in the city, but to bring together the known main findings in Babylon, in what the author hopes is a correct and understandable way. The result of this study is intended

¹ The GIS software used is QGIS, the BIM program is ArchiCAD. Renderings have been done with Artlantis.
to be a kind of critical archaeological history of Babylon, and possibly also an academic
guidebook of sorts for scholarly visitors to the site. Others will, it is hoped, undertake
more advanced and detailed studies in the future.

The famous German excavations directed by Robert Koldewey in 1899–1917,
followed by later Iraqi excavations and reconstructions, will be discussed in Section
1.2. There has been a renewed interest in Babylon during the last decades, both in the
remains of the city as they stand in Iraq, and in the finds and interpretations of previous
evacuations and artefacts in museum collections. In Iraq, the 2003 invasion created
problems on the site, but also media interest. An Arabic book summarising the Iraqi work
during previous decades in Babylon was published in 2010, with an English translation
in 2012. In 2019 the archaeological site of Babylon was accepted by UNESCO as a
World Heritage Site. Major conferences dealing with Babylon were held in Berlin in
1998 and 2008. In 2008, there were large exhibitions about Babylon in Berlin, Paris and
London. The programme was initiated from the Vorderasiatisches Museum in Berlin in
collaboration with the Louvre in Paris and the British Museum in London.

This first chapter will offer some information about the historical development of the
buildings and landscape in Babylon, with a short introduction to the main excavations, and
some critical questions concerning the possibility of understanding and reconstructing
buildings in the city. In particular, the accuracy of ancient documentation and the heights
of the walls will be considered, as well as some basics about the building materials used.
The following chapters set out these issues in more detail.

Chapter 2 will introduce the history, excavation and other documentation of the
city walls and city gates. A presentation of the walls and gates as they stood during
Nabopolassar’s time will be followed by a detailed discussion of their development
during the reign of Nebuchadnezzar, including a calculation of the amount of construction
materials. The Ištar Gate and the area around it, with the different levels and the upper-
level glazed decoration, will be treated separately.

Chapter 3 will address the palaces, with detailed interpretations of the development of
the main traditional South Palace and the newly built (by Nebuchadnezzar) North Palace,
and provisional discussions of some of the main finds in these buildings. Reasonable
suggestions for the location of the Hanging Gardens in the North Palace will be offered,
with some treatment of the adjoining West and East Fortifications. The Summer Palace
in the northernmost part of Babylon will conclude the discussion.

The temples will be discussed in Chapter 4, detailing what is known about the
Marduk temple and the ziggurat, with a short critical discussion of the reconstructions
and a calculation of the amount of construction materials. The historical development
of the four temples reconstructed on site in Babylon on their old foundations – i.e. the
Nabû, Ištar, Ašratum and Ninmaḫ temples – will be discussed, with indications of which

---

2 Damerji 2010; Damerji 2012.
1.1 Introduction

Fig. 1.1. Babylon as it probably was from late Old Babylonian times, 17th century BC, until the reign of Nabopolassar (625–605 BC), seen from the west. The Ištar Gate is marked at the northern edge of the city. In this and all following figures, reddish-brown walls represent baked brick, and whitish grey represent unbaked mudbrick. Model: Pedersén.

Fig. 1.2. Babylon during the latter part of the reign of Nebuchadnezzar II (604–562 BC), seen from the west. The Ištar Gate is marked in the centre of the enlarged city, in the middle of the palace area. Model: Pedersén.

levels have been used for the reconstructions. The historical development of the other excavated temples, i.e. those of Ninurta and Išḫara, will be similarly discussed. Attention will be paid to the remains of wall decorations in the temples.

Chapter 5 will discuss the historical development and various levels of the Processional Way and a few other main streets. A selection of private houses will be discussed in Chapter 6; they have been chosen because they are large, typical, or have been reconstructed in Babylon. Buildings of later periods will be treated in Chapter 7. These include constructions made in the Hellenistic, Parthian and Sasanian periods; the best-known of these is the theatre. Final discussions and conclusions will follow in Chapter 8.

The classical lists of the Seven Wonders of the World included not just one, but sometimes two constructions in Babylon. These were the enormous City Walls and the Hanging Gardens in the palace. Both are discussed, with possible construction details, as suggested in reconstructions, in Chapters 2 and 3. Another famous building, the Tower of Babel or the ziggurat, is treated in Chapter 4 as mentioned above.

In the following, height is measured using the German excavators’ zero elevation $±0.0 \text{ m}$, established at the top of the now covered inner embankment in the North Palace
area (Fig. 3.30), next to the modern placement of the well-known stone lion.\footnote{Koldewey 1932, 30, pl. 25.} This level corresponds to the average groundwater level at the beginning of their excavations. Comparison at the Ištar Gate by the World Monuments Fund (WMF) with the modern Iraqi standard elevations, according to nearby benchmarks of the municipality of Hillah, has given a correspondence of the German excavation zero ±0.0 m elevation with 25.5 m above sea level (a.s.l.). Owing to lack of precision in both old and new measurements of larger areas in Babylon, the digits are in general given to one decimal place only, in order not to give a misleading impression of exactness.

1.2 Archaeological sources for the buildings

The ruins of the city of Babylon are situated some 90 km south of Baghdad in modern Iraq. This area is in the northern outskirts of the city of Hillah, the regional capital of the Babylon administrative province. It is one of the greenest areas on the Mesopotamian flood plain depending on the water from the Euphrates river system. The centre of Babylon has the approximate WGS 84 coordinates 32°32′30″N 44°25′30″E, or 32.54N 44.42E, or UTM zone 38N 446000E 3600500N; as will be seen below in Section 1.5.1, a metre-based UTM coordinate system will be used inside Babylon in this book.

Early surveyors, like Selby,\footnote{Selby – Collingwood 1859 and Selby – Collingwood – Bewsher 1885.} recorded on their maps several mounds and long ridges, which were later identified as the remains of city areas and city walls at Babylon. Other, similar features that were never subsequently examined any further were also mapped (see Fig. 1.3). The walls in Babylon were traditionally of unbaked mudbrick; baked bricks with asphalt mortar were limited to constructions potentially in contact with water, including streets. During the reign of Nebuchadnezzar II, this changed and many more walls and buildings were constructed with good baked bricks. As will be seen in the following chapters, this was the case for the palaces, some temples, more sections of the city walls, and at least one city gate, the Ištar Gate. The negative side of that development was that the good-quality bricks were highly desirable for new constructions elsewhere, in later periods. Before the German excavations started, the baked brick walls had been (to a large extent) taken away down to their foundations by local brick miners, in order to get good bricks for modern building projects, e.g. in Hillah or at the Hindiyah barrage on the Euphrates. The building material of the unbaked mudbrick walls was of inferior value and of no interest to brick miners and was, therefore, left standing. The mudbrick walls are often better preserved, whereas the more stable walls of good baked brick have disappeared.

Babylon had an area inside the city walls of some 450 ha or 4.5 km² (Fig. 1.1) but, as will be discussed further below, during Nebuchadnezzar’s reign the city approximately doubled in size, to some 950 ha or 9.5 km² (Fig. 1.2) within a maximum north–south extent of 4.8 km and a maximum west–east extent of 4.5 km. It was divided by a north–
Fig. 1.3. Babylon and its immediate surroundings. The map was drawn before most excavations and modern constructions. Several of the features recorded here have been studied subsequently, but not all. Map: Selby – Collingwood 1859.

south arm of the Euphrates into a larger eastern and a smaller western part. In addition to the ridges representing the city walls, there are a number of tells with remains of important buildings or city areas distributed over the rather flat modern alluvial landscape (about +3 m above German zero elevation), at least partly covering the city. The lowest modern point is in the southeast (at German ±0.0 m), an area often covered by water. The highest among the tells were بابل Babil (+25 m above German zero), عمران Amran
Excavations and reconstructions have reshaped the landscape, which is now in some areas much flatter (Fig. 1.4).

Early excavations, especially the ones by Layard and Rassam, brought a large number of clay tablets and other finds to the British Museum and other institutions, but produced hardly any useful plans of excavated structures. For this reason, there will be very few references to these excavations in the present study.

The German archaeological excavations directed by Robert Koldewey in 1899–1917 for Deutsche Orient-Gesellschaft (DOG, German Oriental Society) and the Königliche Museen Berlin (KMB, Royal Museums in Berlin) provided the first and most detailed and reliable examination of the archaeological remains of Babylon (shown in green on Fig. 1.4). During the almost 18 years of continual, year-round excavations, with proper documentation and mapping, a foundation was laid for all future research on Babylon. The fieldwork was brought to an unplanned end by the outbreak of World War I.

The Germans examined in detail parts of the several-kilometre-long remains of the city 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 and a special volume on the most magnificent city gate, the Ištar Gate, here elaborated upon in Chapter 2.

A detailed study was conducted in the upper levels of Nebuchadnezzar’s main South Palace. In the North Palace, built on a large terrace, part of the area was excavated. Fairly complete records of the work were published. The six excavated temples (the present author counts the ziggurat as a temple, as the Babylonians did) have also been published.

Selected areas of residential buildings on high ground have been excavated and published. Sections of the Processional Way were unearthed, often the upper levels and by means of trenches. Remains of the theatre and other late buildings have also been examined and published. Clay tablet archives, terracotta figurines, and inscribed bricks have been studied. These excavations will be discussed in the following chapters.

The Deutsches Archäologisches Institut (DAI, German Archaeological Institute) conducted a series of shorter excavations in 1957–1972, mostly in order to try to clarify some of the open questions from the previous German excavations. These new investigations dealt with the ziggurat and elsewhere almost exclusively at later levels, i.e.

---

7 Reade 1986a; Reade 1999.
8 Wetzel 1930; Koldewey 1918.
9 Koldewey 1931; Koldewey 1932.
10 Koldewey 1911; Reuther 1926, 123–147, pls. 28–33; Wetzel 1938.
11 Reuther 1926.
12 Publication split into several books see Chapter 5.
Fig. 1.4. Map of Babylon showing the German, Iraqi and Italian excavations (see key for colours), with tells and modern villages in the Babylon area. Walls shown without any colour are unexcavated, but have been traced in the landscape. 500 m UTM coordinate grid on the map. For the same map with other content, see Figs. 1.5, 2.1, 4.2; more details of the centre on Figs. 2.2, 2.28, 6.2, 6.9. downloadable: see Digital resources at the end. Map: Pedersén.
Hellenistic, Parthian, Sasanian and Arabic (violet on Fig. 1.4).¹⁵

A long series of Iraqi excavations have added greatly to our understanding. In 1938, Iraqi excavations unearthed the southern larger main gate room of the Ištar Gate complex. The Ninmaḫ temple was re-excavated and reconstructed on the remains of the old walls in 1961–1962. In 1979–1981, the Nabû temple was excavated and reconstructed. Subsequent Iraqi excavations and reconstructions in the late 1970s and in the 1980s, led by Moayed Said Damerji, included the Processional Way, the South Palace, the Ištar temple, the Marduk Gate, the theatre and various private houses (yellow on Fig. 1.4).¹⁶

In the southern part of the inner city, there were more limited Italian excavations in the years 1987–1989 (blue on Fig. 1.4).¹⁷

It has to be said that no proper survey has ever been done of this enormous archaeological site. There may still be a possibility to do, for example, geomagnetic or ground-penetrating radar surveys to establish the main characteristics of this still largely unknown site.

1.3 Historical sources for the buildings

In this study, the cuneiform historical sources will be used, with limited additions from the very best of the classical sources, when they agree with the cuneiform texts. Most of the later, secondary traditions and later developments thereof will be left to others to study. In this introductory section, some basics only will be given; all details can be found in the following chapters for the individual building constructions.

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. An Old Akkadian year name of Šar-kali-šarri (2217–2195 BC) and two later copies of building inscriptions of Narām-Sīn and (2254–2218 BC) Šar-kali-šarri concern other temple constructions. Babylon is referred to in Ur III documents (2100–2000 BC).¹⁸

From the Old Babylonian period, it is possible to connect the written evidence with the buildings, which are much better documented by the Neo-Babylonian evidence. A limited number of references to Old Babylonian city walls, palaces and temples in Babylon will be referred to under the appropriate headings in following chapters. Unfortunately, due to the high groundwater level in Babylon, the only archaeological evidence from such an early period is essentially from private houses on high ground, and not from the monumental buildings. There are several Old Babylonian references to the later attested temples and even to the Ištar Gate.

A lot of information, often detailed, concerning city walls, temples, palaces and

¹⁷ Bergamini 1988; Bergamini 1990.
¹⁸ Sollberger 1985; Frayne 1993 E2.1.4.29, E2.1.5 introduction I (iii k), E2.1.5.5.
other official constructions, such as streets, can be found in the Neo-Babylonian royal inscriptions. These will be discussed in detail below in connection with the relevant buildings. Most of the detailed historical information here about buildings has been
extracted from contemporary royal inscriptions that show what the kings claimed that they achieved.

Many of the main buildings in Babylon were also treated in the topographical composition called *Tintir* = Babylon, or *Tintir*, or Topography of Babylon. *Tintir* has a suggested dating in the Middle Babylonian period, but without any substantial proof. The descriptions in the text, however, agree quite well with excavated remains from the Neo-Babylonian period, even for such spots as the Ištar temple, where older levels seem to be different. The text has a focus on religious entities, with a lot of details about the main temples, but also information about city gates and city walls, water courses, main streets and city areas. There is no mention, e.g., of the large palaces, at least not in identified sections of the text. The composition was copied for centuries and exists even in a possibly 1st-century BC Greek transcription on a clay tablet. Other topographical texts of interest in the following have also been treated in the standard edition of *Tintir*.19

As will be discussed below (Section 2.1.1), there is a reference to the Ištar Gate in

---

a late Old Babylonian text and it is, therefore, reasonable that the traditional city wall associated with the gate also existed in the same period, during the 17th century BC. The traditional city of Babylon, with a size of about 450 ha (Fig. 1.1), was divided approximately down the middle by an arm of the Euphrates called Araḫtu, flowing in a north to south direction, corresponding more or less to the modern Šaṭṭ al-Ḥillah.

During the reign of Nebuchadnezzar II (604–562 BC), when Babylon was the centre of the Neo-Babylonian empire, the city expanded to the east and became approximately twice as large, covering some 950 ha (Fig. 1.2). In this period, there was a huge rebuilding programme. Many of the monumental buildings were constructed on higher elevations, with massive use of extraordinarily good baked bricks in vast quantities. This may be the reason that most of the archaeologically important finds date from this period.

Several of the buildings discussed here continued to be used until rather late, in the Achaemenid, Hellenistic and Parthian periods. Even though any documentation

Fig. 1.7. North wall of the North Palace with limestone blocks, each ca. 75 cm high. Each of the blocks of the middle level has on its upper third, just above the head of the man, a three-line inscription concerning Nebuchadnezzar’s construction of the limestone wall of the palace. The top of the stone wall is now 2 m beneath the present groundwater level. Photo: Buddensieg, November 1911 (Bab Ph 2508, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
about buildings or reconstructions during these periods is very seldom preserved, late uses of the buildings will be mentioned where possible. This does not mean that the buildings went out of use at the documented time, but it may give an idea of the length of their periods of use. The historical sources for such late periods are often Babylonian chronicles and the Astronomical Diaries.20

In medieval Arabic times, Babylon was already famous as the place to get good bricks.21 In the 19th century, up to the start of the German excavations, Babylon bricks were used for buildings in Hillah, among other places, and for the large-scale Ottoman work on the Hindiyah barrage on the Euphrates.

Royal inscriptions almost always refer to an important building, in which 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 distribution of royal inscriptions in Babylon as recorded during the German excavations can be plotted on a map of the city. It is clear that the great majority of the royal inscriptions were excavated in the palaces in central Babylon (Fig. 1.5).

Numerous inscriptions dealing with the construction of buildings were placed on the building material itself, or on other objects, mostly placed in the structure of the building. Most royal building inscriptions were not found in situ but in destruction fill next to the walls where they had been originally placed. As most such inscriptions were placed on the construction material and hidden within the walls, finding them in situ would have required at least partial deconstruction or destruction of the wall, unless the inscription was on the visible surface.

By far the most common building material with inscriptions in Babylon is baked brick. There are hardly any examples of inscribed unbaked mudbrick from Babylon. The text on the baked brick was either written with a stylus on the wet brick before firing, or produced by means of a stamp with the text in mirror format. In most cases, the inscription can be found on the main flat surface placed downwards in the wall. Babylonian construction practice required pouring bitumen on every layer of brick and then a small amount of earth upon the bitumen before the next brick layer. In this way, the inscription was well preserved and visible if the brick should later be reused. An alternative placement of the inscription was on the side of the brick, and in that case, it may have been visible in the wall.

The numerous cylinders, sometimes prisms, of baked clay had much more space for longer inscriptions in a finer clay structure. Cylinders are the normal form for longer building inscriptions in Babylon. Depending on the year of writing and the main construction work treated, the focus, level of detail, etc. may be different. Cylinders and prisms were placed in brick or mudbrick boxes in walls of baked brick, but also in walls of unbaked mudbrick, in the building last referred to in the text.22

---

22 Da Riva 2008.
The German excavations registered a selection of 1,190 either representative or special bricks with cuneiform inscriptions; most of them, 906, carried the name of Nebuchadnezzar. About 230 other bricks had Aramaic inscriptions, alone or as an addition to a cuneiform inscription. There were 157 inscribed clay cylinders and prisms. Among the inscriptions on stone, the largest group was the almost 400 stone pavement slabs.

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. 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. There are examples of inscribed stone blocks – one of them was found in the Ištar Gate, providing the name of the gate during the excavations (Fig. 1.6) – and a stele with building inscriptions was from Babylon (Fig. 4.16). The lower part of the north outer wall of the North Palace was constructed of large limestone blocks (Fig. 1.7). On these blocks was a series of repeated inscriptions. Another exceptional case is the remains of an inscription found at the Ištar Gate, consisting of many hundreds of glazed brick fragments, without reconstructable content, later put together according to the content of another preserved text and placed on the Ištar Gate reconstruction in the Vorderasiatisches Museum Berlin (Fig. 2.35).

Most building and monumental inscriptions were not visible, but some were so at least for a limited period. The large limestone blocks in the outside of the northernmost wall of Nebuchadnezzar’s extended palace had visible inscriptions in a large format mentioning Nebuchadnezzar as builder of the limestone wall of the palace (Fig. 1.7). Somewhat later, an additional protecting brick wall was erected in front of the stone wall, concealing the inscription but also preserving it for the future. Excavated at the Ištar Gate were the abovementioned large number of fragments of blue-glazed bricks with white-glazed cuneiform signs of the same size as on the limestone blocks. The content of the inscription (Fig. 2.35) is unknown, owing to the fragmentary nature of the finds, but it may have mentioned Nebuchadnezzar as builder of the gate. Visible from boats were brick inscriptions on the embankments of Sargon, Nabopolassar and Nebuchadnezzar, as well as the abovementioned stone inscriptions of Nebuchadnezzar. They were all later covered by additional brick walls and therefore hidden from view, but well preserved.

The little available Old Babylonian textual material of interest here, and also the Middle Babylonian including early Neo-Babylonian, 1157–612 BC, has been covered

24 Langdon 1912, Nebukadnezar 15; Wallenfels 2008; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2.
25 Da Riva 2012.
26 Weiershäuser – Novotny 2022, Nebuchadnezzar II 4.
27 George 2011; Weiershäuser – Novotny 2022, Nebuchadnezzar II 1.
28 Koldewey 1925, 1990, fig. 111; Weiershäuser – Novotny 2022, Nebuchadnezzar II 3.
29 Pedersén 2020.
in modern standard editions. The main Neo-Babylonian material is only available in a similar standard edition for Neriglissar, Amēl-Marduk and Nabonidus. Texts from the reigns of Nabopolassar and the quite numerous texts from the reign of Nebuchadnezzar are planned to appear in similar formats, but at the time of writing have not yet been published. However, it has been possible to include numerous references to the forthcoming editions in addition to the old ones. The small amount of material concerning Babylon in Achaemenid inscriptions is available.

---

32 Da Riva 2013a; Weiershäuser – Novotny 2022.
33 Weiershäuser – Novotny 2022 with most texts from Babylon; Weiershäuser – Novotny 2023 has not been numbered so references to Babylon bricks and other places have still to be to the quite old Langdon 1912 with additions e.g. for texts in Lebanon in Da Riva 2012.
34 Courtesy to the Royal Inscriptions of Babylonia online (RIBo), a subdivision of the Munich Open-access Cuneiform Corpus Initiative (MOCCI).
35 Schaudig 2001; Finkel 2013.
1.4 The river and the groundwater

Babylon, being situated in a flat alluvial landscape and dependent on irrigation from the river, can be expected to have had problems with groundwater. One arm of the Euphrates river system ran through the middle of ancient Babylon. It was called the Euphrates, or more specifically Araḫtu; this can be compared with the modern situation, where the comparable arm of the Euphrates is called Šaṭṭ al-Ḥillah. In this flat landscape, rivers have constantly changed course over time, often gradually and slightly, but sometimes much more radically. 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 there was an inland sea), there were also changes, but these have been much less studied.36

Within Babylon, the river slowly moved in a western direction, as described below. The river now runs through the middle of west Babylon, cutting it into two parts and leaving the old riverbed dry so that it can be used as a modern road (Fig. 1.8). Several other ancient water courses, either the result of temporary flooding or more permanent channels, can be seen on the surface, but the main problem is how to date them.37

The groundwater level in Babylon depends on the water level in the Euphrates; it sinks lower when moving away from the river, but increases again somewhat near water channels. The main Babylon irrigation channel, in particular, which has flowed in a southeast direction through the eastern outer city since the 1920s, has resulted in high water levels and a sea-like landscape in the southeast. There is a maximum difference of 2 m in the groundwater level between the area near the river at +2.5 m and the lowest points in southeast Babylon at +0.5 m (Fig. 1.9).38 The modern water level, at about

---

37 Lippolis – Baggio – Monopoli 2013; Pedersén 2014.
38 Consulting Engineering Bureau 2012.
+2 m at the Ištar Gate and the surrounding area of the palaces, can be compared with the average groundwater level at ±0.0 m at the beginning of the old German excavations. The same was reported during the renewed German excavations in 1962. There are, of course, some variations up and down, mostly related to the water level in the river. During a long period of the early German excavations, the Hindiyah barrage was broken and in 1913 the groundwater fell as low as −3.55 m, and with continuous shovelling away of water, even down to −4.0 m in a few places, allowing excavations to levels now impossible to reach. The barrage, completed in 1913, was again replaced by a new construction a few kilometres upstream in 1984–1989, allowing higher water levels and more agriculture in the Babylon area.

The result of the high groundwater is that in many places not only Neo-Babylonian but also later levels lie below the water level. Thus, early historical levels may not be possible to excavate. With few exceptions, it is impossible to explore earlier levels, such as the Old Babylonian. Only during the period when the water level was lower was it possible to dig some levels of such early periods in areas of higher ground. There is a need for a large-scale study of the historical water situation in Babylon, including on-site fieldwork.

In ancient times, at least for some periods, measurements of the river levels in Babylon were taken. These are attested from 652 BC to 73 BC in the preserved parts of the Astronomical Diaries. The water levels were measured relative to previous days or months, indicating the raising or lowering expressed in *ubānu* (finger, 2.1 cm) and *ammatu* (cubit, 24 *ubānu*, 0.5 m). From at least 292 BC to 73 BC, there are also measurements from a fixed upper point (NA) downwards in steps of 4 *ubānu*, corresponding to one brick in height, probably somewhere at an embankment. The highest recorded water level was probably 42 cm above the fixed point, the lowest 3.28 m below. The fixed-point measurements can give an idea of the ca. 3.7 m water level variations in the Hellenistic period. Most measurements are 1 m to 3 m below the fixed point; all high values are in the first month of the Babylonian year or thereabouts, during spring time. It is not clear whether the same range of variations is directly applicable to earlier centuries, owing to possible changes in the hydrological landscape.

### 1.5 Critical questions

Some aspects of the quality and usefulness of the documentation consulted here, and some main topographic perspectives, will be discussed in this section to provide background to the digital reconstruction.

---

39 Wetzel 1930, 55, pl. 41.
40 Bergamini 1977 was a first interesting attempt, but the questions are complicated, and it has on several points not been possible to follow it here.
1.5.1 Correctness of documentation

A survey of excavation maps, compared with satellite images and aerial photos, has been conducted in a GIS system in order to establish still-visible remains of the German and other excavations and use these remains to rectify the old excavation maps. This has enabled confirmations, but also several adjustments and new interpretations of the buildings in Babylon, and in addition the drawing up of several new maps of the city (see Figs. 1.4, 1.5, 2.1, 2.2, 2.28, 4.2, 6.2, 6.9).

It has sometimes been possible to supplement or correct information in previous publications with evidence from new measurements in Babylon. This has been done by BDWG with the kind help and permission of the WMF and the SBAH as indicated at the appropriate places.

The German excavators published only one coherent plan of the whole area of Babylon showing the state of the excavations up to 1914. Normally, the excavators treated each of the tells in Babylon as a separate entity. The Kasr hill was the first to get its own coordinate system, with numbers for the north-south direction and small letters for the west-east direction, at 20 m intervals (e.g. Kasr 26m or, the same example, Kasr m26). Later on, some of the other tells were also given coordinate systems of the same type. Findspots were only recorded regularly with coordinates for Kasr, Merkes,

---

42 Koldewey 1918, pl. 35, approximate A0 size.
Sahn, and Amran; for Amran only the oldest coordinates were used, never the later ones. Coordinates for other areas were introduced in connection with the publications.\textsuperscript{43} An early attempt to introduce a unified coordinate system, with numbers for the north–south direction and capital letters for the west–east direction, at 200 m intervals, for the whole large area of Babylon (e.g. L27) was given up after one year of use. In general, the German excavation plans are reliable for limited areas, such as houses, but the placements of these entities in a larger context have sometimes to be refined by some pushing or rotating.

A UTM coordinate system (WGS 84 / UTM zone 38N) has here been introduced with all the previously separate coordinate systems joined into a single system (west to east 444300E to 448750E and south to north 3598700N to 3603500N). The line at 3,600,000 m or 3,600 km distance from the equator happens to pass through the ziggurat in Babylon, more precisely at the south corner of the inner mudbrick core. The last four digits are enough for practical use in Babylon, and e.g. 445315E 3600750N will be written 445315E 3600750N. Rounded digits are essentially used for the centre of buildings. The present version of the coordinates is based on rectified satellite images and could be refined with more measurements on the spot in the future. A WorldView-2 satellite image with a 50 cm resolution and only 7° off nadir gives available geometrical precision, but in order to get identifiable observations it has been supplemented with several other satellite images and aerial photos as well as maps from various years (\textit{Figs. 1.4, 1.5, 2.1, 2.2, 2.28, 4.2, 6.2, 6.9}).\textsuperscript{44}

One general problem seems to be the use of magnetic north, instead of geographic north, during the early German excavations in Babylon.\textsuperscript{45} The two happened to be identical at the beginning of the excavations, but as the work ended some 17 years later there was an approximate 2° declination.\textsuperscript{46} Depending on when a building was measured and drawn on a plan, it may be correctly placed, or may have to be rotated according to the year of excavation. When rotating seems appropriate, it is by a maximum of 2° in a counter-clockwise direction. A special problem, not discussed further here, may be the excavators’ coordinate grids. Can they be used as published on the plans or should they also sometimes follow the rotation?

An example of the need for rotation is the part of the Processional Way north of the Ištar Gate that was recorded during the latter part of the excavations. The published plan does not fully agree with satellite images or aerial photos, but a counter-clockwise 2° turn of the walls in the publication makes a good fit with the material remains (\textit{Fig. 43 Wetzel 1930, pls. 1–10}. For the Amran coordinates, see Koldewey 1911, pl. 4, 8, and Pedersén 2005, 276, fig. 112.

\textsuperscript{43} There have been several local adaptations of coordinate systems in use with deviation up to some 300 m making it important always to specify system details and compare coordinates for control points.

\textsuperscript{44} Koldewey 1918, 17.

\textsuperscript{45} IGRF Magnetic Field Calculator 2016.
The South Palace on the same and other plans can serve as comparison; the inner courtyards and the east section of the South Palace recorded during the early part of the excavation agree more or less completely with the satellite images, whereas the north and south outer walls of the west section, recorded later, have a clear deviation.

The German excavators measured the height above (+) or below (−) the modern average groundwater level at the beginning of the excavation, corresponding to the top of the inner embankment in the North Palace area, designated ±0.0 m (UTM 445705E 1005N, Kars 8q, Fig. 3.28, 3.30, 5.30). The different excavators interpreted this in slightly different ways, resulting in a deviation of up to almost one metre between different areas in Babylon. In the publications, this discrepancy was mostly, but not always, adjusted.

The renewed German excavations in the 1960s and 1970s still used the same local elevation zero. The Iraqi excavations used several local elevation zeros, but gradually introduced the national elevation grid with metres above sea level from the late 1970s. The Italian excavations used both the German and the Iraqi elevations. As stated above, the German excavation zero (±0.0 m) elevation corresponds to 25.5 m above sea level. In the study here, the German elevation system is used, but a recalculation to the national system is always easy: simply add 25.5 m to any elevation.

The German excavators 1899–1917 had the recording plans drawn up on cardboard sheets and later copied to drawing film or paper for publication. The drawings were signed with a stylised signature, consisting of initials combined in an aesthetically pleasing way. The later German excavations often used graph paper for the plans and sections. The Iraqi excavations produced documentation giving the full names.

From the beginning to the middle of the German excavations, the photographers recorded for every photo details of the shoot, including aperture and exposure time. From the handwriting and also from the periodical use of stylised signatures on the photos, it is possible to establish the name of the photographer in most cases, and those names are given here. Koldewey himself, being interested in technical matters, took more than half of all the photos – during the beginning of the excavations all of them.

The available information in cuneiform texts about the thickness, length, position, and sometimes also height of walls has been used here, and compared with archaeological data. It has been found to be fairly reliable in almost all cases, as long as the ancient principles for measurement are understood and respected. Longer distances are somewhat approximate. Thickness and height of walls were not measured as most modern archaeologists would do it, but rather the maximum measurements are given. This means that the thickness of a wall with towers has not been measured at the main

---

47 Wetzel 1930, pl. 5.
48 However, in the first publications using above sea level, there was a consistent miscalculation giving far too high elevations. In Nasir 1979a and Ishaq 1985 the elevations are about 4.0 m too high.
49 Bergamini 1988; Bergamini 1990.
The Euphrates was constantly moving westwards, as can be seen by the excavated successive embankments of Nabopolassar, Nebuchadnezzar and Nabonidus. A late Babylonian text\(^{50}\) possibly composed early in Nebuchadnezzar’s reign, seems to give 100 m distance from the embankment of Nabopolassar to the east shore of the river in the south. This is double the distance of the later westward move of the east embankment of Nabonidus, and demonstrates the problem caused by the westward movement of the river. An embankment on the western shore of the river has not been found, possibly due to lack of excavation, but seems to be referred to by the last-mentioned text. How such an embankment would be in harmony with the westward movement of the river is not clear and needs to be studied on the spot. At least in the Hellenistic period, the river cannot have flowed in the position indicated on Koldewey’s plans of this area, as its course was used in the south for private buildings (Figs. 1.4, 1.5, 2.1, 2.2, 4.2).

1.5.2 Heights of walls

Whereas the plans of houses and walls are often rather well preserved and documented, calculations of their heights are problematic in several respects. The lower parts of the walls are often sufficiently preserved to allow a fairly secure plan of the walls, but the bases of the foundations have often not been reached, the different ancient ground surfaces related to various levels of the walls are, in several cases, not well known, and the upper parts of the walls are never preserved, leading to several problems with all attempts to reconstruct and understand complete walls.

The ancient city had lower and higher areas. The ancient elevations of the low-lying areas are not well known. The Merkes area of the city lay on higher ground, with slopes running down to the surrounding regions. An approximate idea of the height of a lower part may be arrived at with the help of trench Merkes q2, which ran in a northern direction from the centre of Merkes (Figs. 5.9, 5.39). Interpolating the borders between the different preliminary period-assignments would give a low Neo-Babylonian level of some −1 m to −5 m, which is mostly below what has been excavated.\(^{51}\) Persian levels would be some 3 m above, and older levels below. It is not known if this might be the lowest Neo-Babylonian height, or if there are even lower ones in other areas of the city. The river embankment of Nabopolassar has a staircase going down to about −5.0 m.\(^{52}\)

---

\(^{50}\) George 1992, 130–133, Text 15.

\(^{51}\) Reuther 1926, 74, pl. 5.

\(^{52}\) Wetzel – Schmidt – Mallwitz 1957, pl. 41 section B–B, scale drawing without recorded elevation.
The lowest attested street level within Nebuchadnezzar’s Ištar Gate is −2.7 m, but clay cylinders discussed below in connection with the Ištar Gate may be interpreted as referring to a 3 m lower street level. In the Uraš Gate, there is one single street level attested at +1.4 m, here taken as belonging together with the Nebuchadnezzar embankment in this area. A possible Nabopolassar street level may, if we can trust the interpretation of the clay tablet just referred to, be at about −5.0 m, but in the digital model (pending solid proof) this street level has been taken as −2.7 m, similar to the lowest attested Nebuchadnezzar level at the Ištar Gate. Future examination on the spot may lead to changes on this point.

The measured elevation of the base of walls is, of course, used when known for any reasonable length of walls. Whereas mudbrick city walls have foundations relatively high in the ground, the embankments of baked brick have much deeper foundations and the bases of the walls were often not possible to establish, owing to the high modern groundwater level. The deep foundations of embankments are well attested both archaeologically and according to royal building inscriptions. Such inscriptions even speak about foundations laid in apsû, the subterranean water, but as seen below, these examples are often restricted to foundations placed in the river bank. When the foundation depth of baked brick walls in contact with water is not known, it has here been assigned to −5.0 m when there are no available clear arguments to the contrary.

The height of some door openings in the palace are either completely preserved, or it is possible to establish a minimum value for them. This will be discussed together with the wall remains.

Mudbrick walls of well-built, probably one-storey, private houses are often 1.0 m thick, i.e. 2 ammatu (2 cubits), and made up of three bricks (cf. for brick sizes Section 1.6). It is reasonable to assume that such a wall had a height of ca. 3.0 m; an alternative may be 4 m, but that is not used here. The same proportion of 1:3 between thickness and height gives, for temples with 2 m walls, a reasonable height of 6 m, and so on for even thicker mudbrick walls in buildings. A comparison could be made with Darius’ palace in Susa. The Apadana had stone columns about 20 m high, surrounded by a unbaked mudbrick wall (which is no longer preserved) with 5 m-wide foundations. This gives a proportion of 1:4 for the mudbrick wall, but the main construction element here was the stone columns; an architecture of purely mudbrick may have a somewhat lower proportion.

The freestanding 6.5 m-wide mudbrick main city wall (dūru) founded at about ±0.0 m (e.g. +0.6 m in the southwest, −0.7 m in the east, and in the northwest as high as +1.2 m) was found preserved to a height of up to +12.3 m. The 3.7 m front wall

54 Ismail 1985; Weiershäuser – Novotny 2022, Nebuchadnezzar II 34.
56 Perrot 2013, 211.
(šalḫû) also had its base at about the same level ±0.0 m (e.g. +0.2 m in the east) and is preserved up to height of +8.8 m. It is here assumed that the original height of the walls was about a metre above the maximum preserved height, giving +14.0 m for the main wall and +10.0 m for the front wall. This is a slightly lower proportion, due to the freestanding construction, but there is an additional 2 m-high parapet on the top of the wall. In the area of the palace and the Ištar Gate, the city walls were higher owing to the raising of the terrain during Nebuchadnezzar’s reign. The present maximum preserved height for the main wall here is +13.5 m and for the front wall +14.5 m, but the present top is modern protection, making exact measurement of the remains difficult (Fig. 1.11). The extremely well-preserved walls in this area may be the result of Nebuchadnezzar’s expansion of the palace area, to be described below (Sections 2.3, 2.4, 3.1), resulting in the city walls here being in the middle of the large palace and possibly quite quickly either completely or partly covered.

Baked brick walls may be expected to allow a greater height for the same thickness, but

---

57 Wetzel 1930, pls. 23, 33, 40, 41.
their traditional use (as embankments next to water) requires them to resist considerable sideways forces, and that reduces the possible height somewhat. Nabopolassar’s embankment (Section 2.2) has a lowest attested depth at about –5.0 m and an attested top at +1.1 m, with a walkway along the riverside at about –1.4 m. The wall is here assumed to have had a top at +2.0 m (Fig. 2.21). The Nebuchadnezzar embankment (Section 2.3) east of the Ištar Gate had, at two points at the façade, a base at –3.5 m but, at another place, it goes further down. Owing to the relationship with the Ištar Gate, the base is here assumed generally to be at –5.0 m as for the Nabopolassar wall; future examinations on the spot may lead to revisions. Near the Uraš Gate the wall is preserved to +3.0 m, and in the section west of the Etemenanki precinct, traces of mined wall could be seen at about +4.8 m; but west of the Ištar Gate the inner Nebuchadnezzar embankment reaches an impressive preserved height of +15.2 m (Fig. 1.12). It is here assumed that Nebuchadnezzar’s 3.3 m inner embankment had its top at +7.0 m, except in the area of the palace next to the Ištar Gate, where, owing to the raising of the terrain there, some +15.0 m is assumed. This is about 5 m above the inner walkway there. Along the river there was a walkway at –0.4 m. At the palaces and the Ištar Gate, there is a

Fig. 1.12. Looking southwest. The preserved section of Nebuchadnezzar’s first inner embankment, just west of the Ištar Gate, still stands with the highest of the three tops at +15.2 m, at top left of the photo (marked in yellow). In the foreground is part of the lower, second embankment (red). An even lower embankment belonging to a canal inside the North Palace, where the lion is now standing, had its upper surface at ±0.0 m, the place of the German elevation zero, but is now covered. Photo: Pedersén, March 2016.
second, 6.8 m-thick, Nebuchadnezzar embankment in front of the first one. West of the South Palace the wall is attested up to +6.3 m (Fig. 2.22).58

The walls surrounding the various expansions of the North Palace (Section 3.3) are here treated as embankments with a base at −5.0 m. They, or at least their lower sections, are called embankment (kāru) in the building inscriptions. The walls surrounding the South Palace (Section 3.2) and the Summer Palace (Section 3.7) have here been assigned a base at −3.0 m,59 but pending investigations this is essentially a working assumption. Walls inside the palaces are mostly quite a different matter, with a higher base for the foundations. Koldewey, with some reservations, attributed the baked brick walls on the east side of the South Palace up to +8.0 m to Nabopolassar, and he suggested that above these was a wall of mudbrick that Nebuchadnezzar (according to inscriptions) replaced with a baked brick wall. A problem with this, however, was the corresponding Processional Way at about +2.0 m and a gate with a preserved arch in the baked brick wall (German: Bogentor) at the same approximate low level.60 Pending an excavation to such a level inside the South Palace, it is here instead suggested in the following detailed discussion that the street and gate level at +2.0 m constitutes the palace level early in the reign of Nebuchadnezzar, which would allow a mudbrick wall encircling the mudbrick palace of Nabopolassar to be replaced by the baked brick wall of Nebuchadnezzar (see Section 3.2.1 for details).

The gate in the palace wall mentioned in the previous paragraph originally had a triple arch. The two uppermost arch sections are completely preserved, but the lowest is missing. If we assume the lowest arch had the same measurements, the complete gate opening would be 1.8 m wide and about 5.0 m high. This gives the approximate proportion of 1:2.8 between width and height; compare Sections 2.1.3, 2.4 and 8.3 with further discussions of the size of door openings.

Some of the main baked brick walls had a wider foundation, either original or created secondarily with the help of an underground supporting wall, unfortunately not often examined or preserved. This type of construction, placed underground as an additional supporting structure beside an unbaked mudbrick or a baked brick wall, was almost always of baked brick. The Akkadian word kisû is used here for these walls, as in other modern studies (e.g. Figs. 3.8, 3.9, 4.13, 4.22, 4.27, 4.37, 4.45, 4.48). Often, it has not been possible to account for such alterations of the original structure in the digital reconstruction and in the attempted calculations of building materials, owing to lack of evidence.

The focus here has been an attempt to try to establish the base and upper parts of the walls in order to use this information to reconstruct them in the digital model. More or less the same basic measurements can also be used to discuss the even more complicated

58 Wetzel 1930, several plates.
59 Wetzel 1930, pl. 23 Section A–B.
60 Koldewey 1931, pl. 29; Wetzel – Schmidt – Mallwitz 1957, pl. 18.
question of different ancient water levels mentioned above.\(^{61}\) A number of quite basic problems, especially with dating of the water levels, but also the levels of walls and streets, may need a detailed study on the spot, and partly under the present groundwater level, in order to get any final clarification.

1.6 Building materials

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 (\textit{libittu}, German: \textit{Lehmziegel}, Arabic: \textit{ليسن}), with mortar and plaster of mud. Mudbrick was manufactured from mud mixed with straw and chaff and put in a wooden mould, and then set aside for a period to dry.\(^{62}\)

For foundations and walls in contact with water, baked brick (\textit{agurru}, German: \textit{gebrannter Ziegel} or Koldewey: \textit{Barnstein}, Arabic: \textit{اجرة}) with mortar of bitumen was in use. There is no evidence that the façades of walls of baked brick were covered with plaster, except for temples. The baked brick was not just baked mudbrick (\textit{gebrannter Lehmziegel}), but clay with a higher proportion of sand in the composition. Organics, such as chaff, were included. In test productions of modern copies of Nebuchadnezzar bricks in Borsippa, local clay was mixed with water and 20\% sand was added. After forming and drying, bricks were fired in a brick kiln (\textit{Figs. 1.13–1.16}). The kilns were probably simple scove kilns, with a rectangular stack of bricks leaving spaces for flames and hot gases. The kilns were covered by bricks and mud during the firing, and after cooling the cover was taken away. Traditional Iraqi brick kilns still standing are more advanced, permanent constructions built of baked bricks.\(^{63}\) During Nebuchadnezzar’s reign, the use of good baked bricks heavily increased for official buildings, including massive embankments, the rebuilt palaces, the Ištar Gate complex and even some temples, as will be discussed in the following chapters.

Monumental buildings might have relief decorations in baked brick. Blue glazing was used for some of the baked brick walls (\textit{agurru uqnû}). Sometimes, such as on the late levels of the Ištar Gate and the section of the Processional Way north of that gate, glazing and relief were combined. The reliefs were mass produced by means of moulds for brick manufacture. During the German excavations about 36,000 fragments of 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 bricks with reliefs (Koldewey: \textit{Kunststein}). Such quartz bricks from Susa could contain some 90\% sand, 4.5\% lime, and 5.5\% other components. A total of 680 such quartz brick fragments

---

\(^{61}\) Bergamini 1977, partly with preliminary conclusions not always followed here.

\(^{62}\) Wetzel 1930, 3–4; Sauvage 1998.

\(^{63}\) Wetzel 1930, 3–4; Matson 1985; Sauvage 1998. SBAH in Borsippa is thanked for the information about the production of copies of old bricks for repairing work in Babylon.
was excavated in Babylon.\(^{64}\)

Babylon bricks are basically a full square, but of course buildings also require a limited number of half bricks (or other sizes). Baked Babylon bricks from Nebuchadnezzar’s reign have, with some variations, a size of approximate \(33 \times 33 \times 10\) cm, or ca. 11 dm\(^3\) including mortar. The height of a single baked brick was between 8–10 cm. The unbaked mudbricks are similar or slightly larger, up to some \(34 \times 34 \times 12\) cm or ca. 14 dm\(^3\) including mortar. The height of one unbaked mudbrick was 8–12 cm. For attested periods before Nebuchadnezzar, i.e. Sargon to Nabopolassar, and also at the beginning of the reign of Nebuchadnezzar, both baked bricks and mudbricks may be a few centimetres smaller. The baked bricks were at that time approximately \(31 \times 31 \times 8\) cm, or ca. 8 dm\(^3\) including mortar. In all calculations of the number of bricks in this book, the used approximate volume of one unbaked mudbrick including mortar will be 13 dm\(^3\) and the volume of a baked brick including mortar 11 dm\(^3\). This simplification will facilitate the comparison but result in too low numbers of small bricks. A comparison of the volumes of the walls instead of the number of bricks would give more precision.

The larger baked bricks often have inscriptions; the smaller (with the exception of the embankment) have none. Clearly the date of constructions using the larger, stamped

---

Nebuchadnezzar bricks cannot be before his reign, but the dating of constructions with smaller, uninscribed bricks is more difficult. Other criteria have to be used to decide whether they should be dated to the beginning of the reign of Nebuchadnezzar, the reign of Nabopolassar, or earlier. This will be discussed several times in the following chapters. For the mortar a rough approximate value of 10% of the wall volume can be estimated. In ancient measurements, the horizontal sides of a Babylon brick are about $\frac{2}{3}$ ammatu (cubit) and the height is roughly $\frac{1}{6}$ ammatu (cubit). Many of the baked bricks bore short royal inscriptions and a selection was registered, as mentioned above in Section 1.3.

The Neo-Babylonian Babylon brick can be compared with the modern Western standard brick about 25 × 12 × 6.5 cm or ca. 2 dm³ without mortar. The average size of an ancient Babylon brick is, therefore, some 500% of a modern standard European brick and it is correspondingly much heavier.

The mortar used for most baked brick walls, especially for the embankments in contact with water, was bitumen (kupru), also called tar or asphalt. A heated bitumen mixture was poured on every layer of brick. A small amount of earth (and sometimes straw) was put upon the bitumen before the next layer of brick. The bitumen used in Babylon originated from Hit, upstream on the Euphrates, as analyses have shown. It could easily have been transported by boat downstream to Babylon, a distance of some 200 km as the crow flies. In order to use it as a construction material, it was melted with minerals (sand, clay, etc.) and organic materials (chopped straw, etc.). The mixture used for construction

---

65 Wetzel 1930, 3–4; Koldewey 1931, 3.
consisted of about 20% pure bitumen. The bitumen mortar was found preserved with a thickness of about 6–10 mm, sometimes up to 20 mm. Koldewey calculated that the bitumen had been compressed over time, resulting in a total compression of the wall surrounding the palace of about 2 m. How far such large degrees of compression should be calculated for baked brick walls, only further research can show. Late during the reign of Nebuchadnezzar, lime-gypsum mortar (possibly gaṣṣu, Arabic: جــص) was used for the upper parts of baked brick walls. This was especially noticed in the North Palace area, but also in some limited upper parts of the Istar Gate. The same material was used for the white plaster on some more prominent buildings of baked brick and unbaked mudbrick. The mortar used for mudbrick walls was clay or mud mixed with straw (tibnu, Arabic: تبن). The same material was also used as common plaster to cover mudbrick walls, including the mudbrick city walls. There is no evidence of any plaster

67 Koldewey 1931, 6, 9.
68 Koldewey 1931, 6.
on city walls or exterior palace walls of baked brick.

Wood could be sourced either locally or from distant mountains. The local palm wood was of an inferior quality as construction material. Whenever possible, good wood from far away was preferred; inscriptions frequently mention rosewood (musukkannu) from the east or cedar wood (erēnu) from Lebanon, some 800 km away as the crow flies.\(^70\) Locally available poplar wood (ṣarbatu) and even date palm wood (gišimmaru) could be used for less demanding purposes. Wood was used for roofs in all types of buildings, and for doors in large gates and in other smaller openings. Furthermore, it was used for construction elements, reinforcing and keeping mudbrick and baked brick walls (as well as sections of stone walls) together. Traces of wood were excavated, sometimes burnt, but in most cases only the empty voids of previous wood constructions could be established.\(^71\)

The most common materials used to stabilise a building were (probably basically local) straw (tibnu) or mats of straw or reed, put on the horizontal layers of both bitumen and mud mortar at specific intervals. The straw could be placed on every level of mortar, every second level, or (much) more infrequently. Reeds or reed mats were also used as

\(^70\) Langdon 1912; Da Riva 2012; Weiershäuser – Novotny 2020, 2022, 2023.

\(^71\) Moorey 1994.
part of roof construction.\textsuperscript{72}

Stone had to be brought to the alluvial plain from elsewhere, and was mostly used for the 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. The most readily available stone was limestone (\textit{aban ſadî}, “mountain stone”, Figs. 3.33, 5.35), which could be, e.g., transported by boat on the Euphrates from upstream. Another stone frequently used in the Processional Way was reddish breccia stone (\textit{turminabandû}). The lower parts of the external wall of Nebuchadnezzar’s North Palace were constructed of huge limestone blocks (\textit{Fig. 1.7}). Pivot stones were used for all kinds of doors. For simple doors, such stones were often in secondary use. Otherwise, stone had quite a limited use for walls, being mostly employed only for such construction details as the covering of water channels. The inscribed stones have been referred to above in Section 1.3, especially the large number of pavement slabs.\textsuperscript{73}

Metal, especially bronze (\textit{siparru}) or copper (\textit{erû}), was used essentially for several construction details related to the wooden doors, as well as for bull and dragon statues in front of city gates. Minerals were required for the glaze for glazed bricks. Both the metals and the glaze minerals had to be brought to the area from elsewhere. Detailed assessments of the use of these and other materials must await future studies.\textsuperscript{74}

\textsuperscript{72} Koldewey 1932; Moorey 1994, 361–362.
\textsuperscript{73} Koldewey 1932, 30–33; Moorey 1994, 335–347.
\textsuperscript{74} Provisionally, Moorey 1994; Fügert – Gries 2020 with further references.
2 Babylon: City Walls and City Gates

Abstract

An overview of the largest building structures in Babylon, the city walls and their gates, chiefly from the Neo-Babylonian period. Attempts are made: to distinguish different building phases, using German and Iraqi excavations combined with cuneiform and other ancient texts; to relate these to the remains now to be seen in Babylon; and to give reasonable interpretations.

2.1 Introduction

Owing to their length, in particular, but also their thickness and height, the city walls with their gates were by far the largest structures in Babylon. Both the external walls around the city and the walls around city areas and the palaces will be discussed in this chapter. The archaeological material from German and Iraqi excavations will be critically evaluated, and combined with ancient cuneiform and other texts. The results are used to build a digital architectural model of Babylon, based on modern building construction computer techniques. This model allows us to test whether specific measurements of the construction are reasonable, and to calculate the quantities of the main construction materials. The implications of these conclusions will then be discussed.

2.1.1 History of the city walls and city gates

The history of the city walls and city gates in Babylon has been treated in a seminal publication by George,\(^1\) which serves as the basis for the following short historical summary – with one important addition that will imply a reconsideration of the construction period.

The (possibly Middle Babylonian) topographic text called \textit{Tintir}, or Topography of Babylon, includes a description of buildings in Babylon that its author considered important. In addition to all the religious buildings, the text mentions the double city walls, both the main wall (\textit{dūru}) with the name Imgur-Enlil and the front wall (\textit{šalḫû}) called Nēmet-Enlil, as well as the names of eight main city gates along the walls.\(^2\) Most of the further detailed historical information about buildings in this volume has been

---

\(^1\) George 1992.
extracted from contemporary royal inscriptions; these set out what the kings claim that they have achieved. More about the form and use of these inscriptions can be found below.

The old city wall
George placed some other gates, either mentioned in Tintir as being inside the city, or found in Old Babylonian texts, along an assumed old inner city wall around a smaller city dated to early Old Babylonian times. This sounds quite plausible, but has not been substantiated owing to lack of excavations. The Old Babylonian year names for Sumuabum year 1 (1894 BC), Sumulael year 5 (1876 BC), and Apil-Sîn year 2 (1829 BC) mention the construction of city walls of Babylon, which may be these walls. Apil-Sîn year 15 (1816 BC) also refers to an east gate of the city wall.3

Imgur-Enlil and Nēmet-Enlil with their embankments
The traditional rectangular city wall (Figs. 1.1, 2.1), whether or not it was called Imgur-Enlil from the beginning, was probably planned and constructed sometime during the Hammurapi dynasty. For lack of other evidence, the oldest known references to the traditional city wall in Babylon have been Marduk-šāpik-zēri (1081–1069 BC) building Imgur-Enlil,4 and Adad-apla-iddina (1068–1047 BC) rebuilding the old wall, called Imgur-Enlil.5 This period, or just before, has often been taken as the beginning of the traditional, planned city wall of Babylon.6 A more recently published late Old Babylonian text,7 however, points to an earlier dating. It registers the acquisition of a building plot at the Ištar Gate in the New Town area of Babylon in the 11th year of Samsu-ditana, i.e. 1614 BC, at which time the gate (obviously) already existed. The same document refers to an earlier acquisition of the same plot in the 19th year of Samsuiluna, i.e. 1730 BC. Therefore, the Ištar Gate belonging to the Tintir group of city gates and the city wall associated with the gate existed at least as early as 1614 BC, in the late Old Babylonian period. That the gate and the wall also existed in 1730 BC is possible, but not certain, as only the building plot is referred to and not the gate (this is due to the type of text). No excavation of such old levels of the city walls has been possible, because of the high groundwater level and overlaying later buildings.

The partially excavated double city walls (main wall dūru and front wall šalḫû) of unbaked mudbrick (libittu) date to the reigns of the Neo-Assyrian kings, the Neo-Babylonian kings, and the first Achaemenid king. Embankments (kāru) of baked brick (agurru) with bitumen (kupru) mortar protect the mudbrick walls from the water in the river and the moats. Inscriptions of Sargon II (721–705 BC) mention the construction

3 George 1992, 16–20, fig. 3; Sigrist and Damerow 2001.
4 Frame 1995, B.2.7.1.
6 So even George 1992.
Fig. 2.1. Map of Babylon, showing the city walls during the latter years of the reign of Nebuchadnezzar II. The ancient names of the city gates and the districts are given. 500 m UTM coordinate grid on map. For the same map with other content, see Figs. 1.4, 1.5, 4.2. Cf. Figs. 2.2, 2.28, 6.2. Downloadable. Map: Pedersén.
of the walls Imgur-Enlil and Nēmet-Enlil in addition to embankments. Sennacherib (704–681 BC) destroyed Babylon, including the main and front city walls, in 689 BC. The rebuilding of Babylon started with Esarhaddon (680–669 BC), who built anew the main and front city walls, along with the Marduk temple Esagil. Assurbanipal (668–627 BC) then reconstructed the front wall Nēmet-Enlil, which had fallen into disrepair.  

The account of the rebuilding of the city walls by Esarhaddon gives both the length (UŠ) and width (SAG) of the rectangular Imgur-Enlil wall as 30 ašlu, which, with one ašlu equalling 60 m, would give 1,800 m. These round numbers correspond better with east Babylon 1,700 × 1,500 m than the complete city 1,700 × 2,700 m. In the Neo-Babylonian period, Nabopolassar (625–605 BC) writes about the renovation of the walls Imgur-Enlil and Nēmet-Enlil as well as the construction of embankments (kāru) of baked brick called either “baked brick embankment” (kār agurri) outside the city wall or “embankment of the Araḫtu river” (kār Araḫti), i.e. the branch of the Euphrates corresponding to modern Šaṭṭ al-Ḥillah. Nebuchadnezzar II (604–562 BC) claims that he completed the walls Imgur-Enlil and Nēmet-Enlil as well as building an additional embankment (kāru) and possibly, depending on the interpretation, an embankment on the west side of the river. Two Nebuchadnezzar embankments joined to the old embankment are referred to, even if there are more references to one new embankment added to Nabopolassar’s two embankments. Both may be correct for the situation in the palace area. 

Repair of part of the eastern section of the inner city wall Imgur-Enlil is reported by Nabonidus (555–539 BC), who gave the total length of Imgur-Enlil as 20 UŠ, or about 7,200 m. That length agrees with modern measurements when the stretches of wall falling within the palace area at that time are disregarded (this was the case from late in the reign of Nebuchadnezzar). Nabonidus’ name is also connected with the substantial new embankment along the eastern shore of the river by inscriptions on bricks, as discussed below. The last references in historical texts to work on Imgur-Enlil and the embankment (kāru) along the moat are from the reign of Cyrus II (538–530 BC).
Fig. 2.2. Map of eastern inner Babylon, showing the city walls during the latter years of the reign of Nebuchadnezzar II. The ancient names of the city gates, the districts and some other buildings from various periods are given. 200 m UTM coordinate grid on map. A larger area in Figs. 1.4, 1.5, 2.1, 4.2, and more details on Figs. 2.28, 6.2, 6.9. Cf. Fig. 5.2. Map: Pedersén.
The city walls, or at least an enclosable section of them, were still functioning in the Hellenistic and early Parthian periods. This is clear from a reference, in the Astronomical Diaries for the year 123 BC, to the closure of the city gates because of fighting with Arabs. It is not clear, however, if this refers to the complete old traditional city walls, sections of them, or some other kind of structure.\textsuperscript{18}

\textbf{Other main walls by Nebuchadnezzar}

Nebuchadnezzar’s additional projects (Figs. 1.2, 2.1, 2.2, 6.2) included a series of monumental constructions of baked brick in connection with the successive expansion of the central palace area. This consisted of the South Palace (German archaeological vocabulary: \textit{Südburg}) with the North Palace (German: \textit{Hauptburg}) immediately to the north outside the city walls. The projects include: the heavy fortification (\textit{ḥalṣu}) of the so-called West Fortification (German: \textit{westliches Vorwerk im Fluß}) in the river west of the South Palace;\textsuperscript{19} a strong embankment (\textit{kāru dannu}, German: \textit{Nordmauer}) around the North Palace, 360 \textit{ammatu} (cubits) or about 180 m north of the city wall;\textsuperscript{20} and another strong embankment (\textit{kāru dannu}) around the North Palace extension, 490 \textit{ammatu}, or 245 m, north of the city wall, next to a massive wall (\textit{dūru rabû}) of stone (German: \textit{Mauer mit der Kalksteinverbrämung}).\textsuperscript{21} The fortification aspect will be discussed in this chapter, but the relationship of the walls to the inside of the palaces will be considered in more detail in Chapter 3.

A major project was the expansion of the city to about double the previous size. Some 4,000 \textit{ammatu}, or about 2 km, away, it was enclosed by a new eastern strong wall (\textit{dūru dannu}) with a massive embankment, (Fig. 2.1).\textsuperscript{22} Inside the northernmost corner of this wall, Nebuchadnezzar constructed another wall around what the archaeologists called the Summer Palace (\textit{Sommerpalast}), a building of baked brick (Section 3.7).\textsuperscript{23} All these walls of Nabopolassar, Nebuchadnezzar and Nabonidus have been attested by excavation. Another wall of Nebuchadnezzar is mentioned in inscriptions and said to be an earthen rampart (\textit{šipik eperi}) with baked brick (\textit{agurru}) sides, stretching all the way from the river at Babylon to Kiš, a distance of some 12 km. It has not yet been identified on the ground,\textsuperscript{24} but compare the ridges and rampart, running in an eastern direction,

\textsuperscript{18} Sachs – Hunger 1996, 298–299.
\textsuperscript{19} Langdon 1912, Nebukadnezar 7, 13, 20; Da Riva 2012, 54; Weiershäuser – Novotny 2022, Nebuchadnezzar II 12.
\textsuperscript{20} Langdon 1912, Nebukadnezar 21; Weiershäuser – Novotny 2022, Nebuchadnezzar II 22.
\textsuperscript{21} Langdon 1912, Nebukadnezar 14, 15; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 23.
\textsuperscript{22} Langdon 1912, Nebukadnezar 1, 4, 5, 9, 13, 14, 15, 20; Da Riva 2012, 57; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 13, 16, 19, 23, 31.
\textsuperscript{23} Langdon 1912, Nebukadnezar 14, 15; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 23.
\textsuperscript{24} Langdon 1912, Nebukadnezar 19; Da Riva 2012, 57; Weiershäuser – Novotny 2022, Nebuchadnezzar II 15, 17.
recorded on early maps (Fig. 1.3). This is more or less the area where the recently completed main entranceway to Hillah from the motorway at Kiš has been constructed. Beyond Kiš, the rampart continued to Kār-Nergal on the Tigris. In order to protect Babylon, Nebuchadnezzar built a similar rampart with brick sides some 60–65 km to the north in the Sippar area, all the way from the Tigris to the Euphrates. This northern stretch has been surveyed and partly excavated in its western section.

2.1.2 Excavations of the city walls
The German archaeological excavations directed by Koldewey in 1899–1917 provided the first and most detailed examination of the remains of city walls in Babylon (Fig. 1.4). They examined in detail parts of the several-kilometre-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 and a special volume on the most magnificent city gate, the Ištar Gate. In addition, information on the walls around the palaces, both inside and outside the main city walls, can be found in two volumes dealing with the palaces in Babylon. (For the palaces, see also Chapter 3.)

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

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, are still standing nearby. The east inner wall north of the Marduk Gate has been partly reconstructed, and the inner half of the Marduk Gate is reconstructed to its full, assumed height. Sections of the city wall have been removed in order to make place for (illegal) modern buildings. This is especially the case in the northwest corner of the western city, where the wall is clearly visible on the 1960s Corona satellite images but now mostly missing.

Moats, 80 m wide, 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 for 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. The canal thus gives visitors a good idea of the borders of the inner city of Babylon.

25 Reade 2010.
26 Da Riva 2012, 57, 75–76; Weiershäuser – Novotny 2022, Nebuchadnezzar II 15.
28 Wetzel 1930.
29 Koldewey 1918.
30 Koldewey 1931; Koldewey 1932.
2.1.3 Texts and pictures dealing with city walls

There is hardly any archaeological evidence for the upper parts of the city walls or gates in Babylon, which are no longer preserved, and even the remains of the lower parts often need supplementary information in order to be interpreted. Available material consists of contemporary texts describing walls and gates, including archival documents referring to them, and contemporary pictures showing such structures in other cities and perhaps even in Babylon itself. In addition, there are the Greek, Latin and Arabic authors who give – often second-hand – descriptions of Babylon’s walls and gates, or their later fate.

**Texts**

Mention has already been made of the cuneiform text called, in ancient times, *Tintir*. Most of *Tintir* deals with religious structures, but on the second half of tablet 5 there is a listing of the main city gates, the double city wall, as well as waterways, streets and city divisions. George understood the listing of the gates in the text to follow the order of the city gates along the wall, a position followed here, thus giving the names of the four gates on the east and the four gates on the west side of the river. Along the eastern city wall, we have, going anticlockwise from the southwest: Uraš Gate, Zababa Gate, Marduk Gate, and Ištar Gate. Along the western city wall, going anticlockwise from the northeast, we have: Enlil Gate, King’s Gate, Adad Gate, and Šamaš Gate ([Figs. 2.1, 2.2](#)). Older plantings of these and additional gates in different orders along the city walls of Babylon have not been substantiated.

Three more texts in the same publication by George deal with city gates and walls in Babylon. The first, quite fragmentary, text is a survey of the city wall Imgur-Enlil, giving detailed measurements. The second, also quite fragmentary, text gives on the obverse the length of the sections of the city wall and has on the reverse a partially preserved map of the area at the Šamaš Gate. The third and better-preserved tablet lists the number of towers and gives the names of five gates along a section of a city wall. We follow the interpretation of George in seeing this as the new eastern city wall constructed by Nebuchadnezzar, giving the names of five city gates along the wall. From the north, we have Gate of the Šūḫi Canal, Gate of the Madānu Canal, Giššu Gate, Gate of the Sun of the Gods, and Gate of the Seashore ([Fig. 2.1](#)).

Archival documents have a more restricted topographic approach, depending on the interests of the document’s owner and the content of the text. Distinctive archives have specific geographical perspectives within Babylon and its surroundings. Pending a comprehensive study, some examples can be given. The large archive of the Egiibi family, found in southern east Babylon, deals with areas especially inside and outside of south Babylon: Zababa Gate, Uraš Gate and Šamaš Gate at the southern or southeastern inner city wall; Ištar Gate and Enlil Gate in the north inner city wall; Giššu Gate at

---

33 E.g., the order of gates in Unger 1930 and Unger 1931 cannot be followed.
the southeastern outer city wall; the Market Gate inside South Babylon at the assumed older city wall; as well as the southern city areas Tê and Šuanna next to the mentioned gates, and, further, the areas outside these gates in the direction of Kiš and Borsippa.\textsuperscript{35} Other Babylon archives have different topographical and geographical outlooks, but that would require a separate study.

The great majority of all royal building inscriptions have not been found \textit{in situ} but in destruction fill next to walls where they were originally placed. Most building inscriptions were placed on construction material and hidden in walls. If the inscription was not on the visible surface, it would have required at least partial deconstruction or destruction of the wall to find the inscriptions \textit{in situ}.

There was a heavy concentration of \textit{in situ} building inscriptions on the visible side of bricks in some parts of the embankments; in most cases these bricks were later covered by additional walls. In the rather short embankment of Sargon II, the German excavators recorded 12 inscribed bricks; in the much longer unearthed section of Nabopolassar’s embankments, 68 inscribed bricks were registered. These walls were later covered by Nebuchadnezzar’s embankments, in which only 3 inscribed bricks were recorded \textit{in situ}.\textsuperscript{36}

In the later, so-called Nabonidus embankment along the river, bricks in situ were recorded with inscriptions of Nebuchadnezzar, Neriglissar and Nabonidus. This has sometimes been interpreted to mean that Nabonidus reused bricks from earlier kings. It may also be, as discussed below, that work on the wall started with Nebuchadnezzar, continued with Neriglissar and was completed by Nabonidus.\textsuperscript{37} As already noted, the north embankment of the extension of the palace had a façade of heavy limestone blocks (\textit{Fig. 1.7}). On the outer visible face of at least six of them, an inscription recorded that Nebuchadnezzar built the “wall of the palace of Kadingirra (Babylon) in limestone (mountain stone)” (\textit{dūr ekal Kadingirra ina aban šadî}).\textsuperscript{38} In addition, the German

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{35} Wunsch 2000, and Wunsch personal communication.
\item \textsuperscript{36} Wetzel 1930, 64–65, 79–83; Frame 1995, Sargon II B.6.22.1.7–18; Weiershäuser – Novotny 2022, Nabopolassar 7–11; Langdon 1912, Nebukadnezar 32.
\item \textsuperscript{37} Wetzel 1930, 8, 52, 72.
\item \textsuperscript{38} Koldewey 1932, 30–33, pl. 24; Koldewey 1990, 178.
\end{itemize}
\end{footnotesize}
excavations unearthed several Nebuchadnezzar bricks \textit{in situ} in the palace area, and a number of stone slabs with inscriptions of Nebuchadnezzar.\footnote{Cf. Koldewey 1901.}

The Iraqi excavations recorded \textit{in situ} some inscriptions related to the city walls. One cylinder of Assurbanipal was found in a mudbrick box in the city wall, and in another mudbrick box in the centre of the first mudbrick tower east of the Ištar Gate, two cylinders of Nabopolassar and one of Nabonidus were uncovered.\footnote{Al-Rawi 1985; Al-Rawi 1991 Texts 1, 5; Frame 1995, Ashurbanipal B.6.32.1.17; Weiershäuser – Novotny 2020, Nabonidus 1.2; Weiershäuser – Novotny 2022, Nabopolassar 2.2, Nabopolassar 3.}

\textbf{Pictures showing city walls}

There is no certain ancient pictorial representation of the city walls of Babylon. However, there are a number of depictions of different city walls, also from Babylonia, that can be used for comparison. The German excavators even suggested that they may have found pictures of gates in the city walls of Babylon.

A gate between towers is shown on six small gold plates (\textit{Fig. 2.3}), each $11 \times 11$
Fig. 2.5. City wall of Babylon, according to the German excavators’ reconstruction. The south inner city wall with Uraš Gate. The digital model has rectangular wall-openings instead of the round ones shown here, cf. Fig. 2.12. Wetzel 1930, fig. 2.

mm, excavated together with other gold jewellery in a richly adorned grave built into the northern outer wall of the South Palace (Fig. 3.6, coordinates Kasr 22i). Koldewey considered that this may be a pictorial representation of gates in the city wall of Babylon. At the top of the towers were round openings instead of the more common rectangular ones.41 This is the reason why such round openings can be seen on almost all reconstructions of city walls in Babylon done by expedition members (Fig. 2.5). The only exception is the full-scale reconstruction of a section of the Processional Way in the Vorderasiatisches Museum in Berlin, which has rectangular openings. It has been suggested that the round holes may be due to technical problems with the small size of the plates. The gold plates disappeared during World War II. It was later attempted to show from excavation photos that the gates were not of the city wall but of a temple, but this argument was partly based on poor access to the documentation from the excavation, using a gold plate from another grave as the main evidence.42

A large number of the Assyrian palace wall reliefs, but also decorated bronze bands for doors, show city walls around different cities. Despite the fact that many of these have been accessible for more than a hundred years, there has been no comprehensive study of the geographical distribution of the different styles of the city walls depicted. A reason for our lack of understanding is probably the fragmentary state of preservation of several of the reliefs. While there is no known picture of Babylon, Dilbat, a smaller city some 27 km south of Babylon, is depicted on a relief from Sennacherib’s Southwest

41 Bab 32285; Koldewey 1918, 46; Koldewey 1931, 105, pls. 25, 30; Koldewey 1990, 45, fig. 20.
42 Moortgat-Correns 1996 has not been possible to follow.
Palace in Nineveh (Fig. 2.4). The Assyrian reliefs show conquered and destroyed cities, but even though Sennacherib destroyed Babylon, no certain pictorial reference to the city has been established. Reliefs depicting city gates mostly show door openings having a rounded arch, but doors with flat tops are also attested. The proportion between the width and height of door openings, especially for Babylonia, as shown on the Assyrian reliefs is between 1:2.0 and 1:3.0, mostly about 1:2.6 to 1:2.7. This is very different indeed from the height indicated on the gold plates (Fig. 2.3). The proportions between the width and height of door openings on the Assyrian reliefs will be discussed in connection with Babylon finds in Section 2.4 (see also Section 1.5.2). 43 The digital model has followed the excavators’ opinion regarding the appearance of the upper sections of the walls, except that the upper openings are rectangular, as shown on most Assyrian reliefs; but the question remains to be studied in more detail (Figs. 2.5, 2.7).

2.1.4 Layout and construction of the city walls

One architectural feature is seen at prominent places on the city walls. Here, stretches of the wall angle shallowly inwards to a certain point, perhaps always a gate, and then out again (Fig. 2.6). As can be seen on all plans of the area, the city wall angles in by 11° to the Ištar Gate, probably in order to stress the prominence of the gate, but also in order to have the wall meet the river at a more perpendicular angle. With the successive northerly expansions of the palace area during Nebuchadnezzar’s reign, the new north walls had an approximate 27° angle where they met the Processional Way at the new North Gate (see below), stressing even more the monumentality of the wall and placing it almost at a right angle to the river.

The city walls had towers (dimtu); many of them have been documented by means of excavation, and others can be reconstructed, since they appeared at regular intervals. The city walls around the eastern inner city have been excavated to a large extent (Fig. 2.7). It is reasonable to assume that the city walls around the corresponding western city, even if they have not been excavated at all and are traceable only as ridges on the surface, were constructed with similar walls and towers. The eastern outer city wall has been excavated only to a small extent, but symmetry and the similar construction of the embankment, compared to the last embankment along the east shore of the Euphrates, could possibly
allow a reasonable reconstruction there also.\textsuperscript{44}

The towers along the mudbrick wall, as a rule, protrude on both sides of the wall (Fig. 2.7), and following a number of Assyrian reliefs have here been reconstructed with an extra passable storey above the main level of the wall; larger towers even have two extra storeys. Large towers at the main wall, Imgur-Enlil, often protrude 3.3 m or 3.6 m on the outside and 0.7 m on the inside. Small towers on the same wall often protrude 0.7 m, or two bricks, on both sides. Walls of baked brick often had other types of towers. Even if projections on both sides are attested, towers protruding on only one side are very common, and there are examples of towers in baked brick walls where the projections on one side of the wall do not correspond to those on the other side. Towers in walls of baked brick have, therefore, often been treated provisionally in alternative ways. In particular, walls that do not stand at the outer face of the city, but rather surround palace areas, have here been taken as having towers open on one side (Figs. 2.34, 3.32). Towers in the embankments of Nebuchadnezzar often protrude 5.0 m on the outside. Large towers around the palace enclosure walls may protrude 2.0 m, but more common was a much smaller protrusion of e.g. one brick, 0.35 m. Special towers, such as in corners or at gates, often had quite different dimensions.

In detail, around the east inner city, the main wall (\textit{dūru}) with four gates had 168 towers, the front wall (\textit{šalḫū}) had 203 small towers, and the embankment (\textit{kāru}) along the moat had no towers during Nabopolassar but during Nebuchadnezzar gained 94 towers. Assuming the same layout and distances between the towers for the west city would give a main wall (\textit{dūru}) with four gates with 137 towers, a front wall (\textit{šalḫū}) with 169 small towers, and an embankment (\textit{kāru}) along the moat lacking towers during Nabopolassar but during Nebuchadnezzar gaining 65 towers (Fig. 2.13). All this would give a total number of 836 towers along the moats of the inner city walls.

\textsuperscript{44} Wetzel 1930.
The embankment of the inner city along the east shore of the Euphrates had no towers except at the corners. This changed during late Nebuchadnezzar or Nabonidus with the construction of the new embankment with 68 towers (cf. above). It is not known if and where there was a similar embankment on the west shore of the river, and it has not been counted here.

The eastern outer city wall (dūru) was excavated or traced only for some 850 m, documenting 17 towers. Assuming the same distribution on the total length would give about 150 towers, half of them large, half small. Owing to lack of excavation, there is no secure information about the number of towers along the embankment (kāru). In the excavators’ opinion, the quite small excavated section of the embankment, only a few metres, had similarities with the late embankment at the river. If true, that would give some 340 towers, and they have been accounted for here (Figs. 2.15, 2.16).45

There were 60 towers on the south, east and eastern half of the north sides of the baked brick wall surrounding the South Palace just south of the north inner town wall. These towers all protruded on the outer face of the wall and several also had a corresponding section on the inner side of the wall (Fig. 3.5).46 The gradual expansions of the central palace area in a northern direction outside the city walls were surrounded by a series of massive baked brick walls described as embankments (kāru). The first expansion had some 56 towers on the outside and some 26 on the inside of the surrounding walls. None of those on the inside corresponded to those on the outside of the same wall. The second expansion in a northern direction had a massive wall with 22 additional towers. The first expansion included 22 towers on both sides of the Processional Way north of the Ištar Gate (Fig. 2.25).47

45 Wetzel 1930, pl. 52.
46 Koldewey 1931.
47 Koldewey 1932.
Fig. 2.10. Uraš Gate during the reign of Nabopolassar, looking north. The embankments of Nabopolassar always had rounded corners. The Euphrates flows to the left, with an 80 m-wide moat in front of the gate. Model: Pedersén.

Fig. 2.11. Uraš Gate during the early part of the reign of Nebuchadnezzar. Embankments with rectangular towers have been added in front of the previous embankments. Model: Pedersén.

Fig. 2.12. Uraš Gate during the latter part of the reign of Nebuchadnezzar, or that of Nabonidus. Embankments with additional fortifications and a massive extra embankment added along the river. For an alternative, not used here, cf. Section 2.4. Model: Pedersén.
2.2 City walls during Nabopolassar’s reign, with earlier remains

The wall around the Summer Palace, in the north of the area surrounded by the outer town wall, has traces of towers, and multiplying these on a regular basis gives an assumed 64 towers on the outside of the baked brick wall surrounding the structure (Fig. 2.16).\textsuperscript{48} Thus, the total numbers of different towers along the city walls would be somewhat more than 1,000. Details depend on how the calculation is done: with the numbers given here we get around 1,640, or 1,390 if the walls around the palaces are not counted.

\textbf{2.2 City walls during Nabopolassar’s reign, with earlier remains}

Here follows a discussion of the archaeological findings with corresponding ancient textual specifics, and explanations of how a number of details of diverse walls and gates were used in the present digital reconstruction. The attested measurements used for the digital model are discussed, along with the interpolations between known measurements. A reconstructed measurement indicates the best possible guess in order to get a coherent model.

The city walls of Babylon at the time of Nabopolassar consisted of the double mudbrick walls Imgur-Enlil and Nēmet-Enlil with a single embankment of baked brick outside for most of the length of the walls, giving a total width of about 37 m. Outside the embankment was the moat, about 80 m in width.

\textit{Imgur-Enlil and Nēmet-Enlil}

The city walls (Figs. 2.1, 2.2, 2.8, 2.9, 2.10, 2.18, 2.21) of east Babylon, i.e. on the east side of the old river, had a length attested by excavations of 4.35 km.\textsuperscript{49} In west Babylon, i.e. on the west side of the same river, the unexcavated structures of some 3.45 km can be followed as a ridge in the landscape, partly cut away by the modern river and often destroyed by modern buildings and agriculture; this destruction accelerated after 2003.\textsuperscript{50}

The huge, 6.5 m-thick mudbrick main wall \textit{(dūru) Imgur-Enlil} had the lower edge of its foundation at about ±0.0 m with a reconstructed height of the wall of 15.0 m, including foundations. The foundation of the 3.7 m-thick mudbrick front wall \textit{(šalhū) Nēmet-Enlil} is also placed at about ±0.0 m but the height is reconstructed as 8.0 m. There were alternate large and small towers 17.7 × 11.4 m and 8.0 × 9.4 m along the main wall and smaller towers of 5.7 × 5.1 m along the front wall. The towers are reconstructed here according to depictions on Assyrian reliefs and the opinion of the excavators, with rooms on one storey and two stories (height 3.0 m or 6.0 m), and above them floors with crenellations (Fig. 2.7). On the main part of the walls there may also have been crenellations, adding almost 2 m to the wall height.\textsuperscript{51}

\textsuperscript{48} Koldewey 1932.
\textsuperscript{49} Wetzel 1930, 7–29.
\textsuperscript{50} Wetzel 1930, 63. Corona satellite images from the 1960s show a better preserved wall.
\textsuperscript{51} Wetzel 1930, 7–29; Weiershäuser – Novotny 2020, Nabopolassar 1–5.
Embankments

The embankments (kāru) of baked brick along the 80 m-wide moats protected the two mudbrick walls. The bases of the embankments are much deeper than those for the mudbrick walls themselves, at −5.0 m with a height for the Nabopolassar wall of some 7.0 m, i.e. with the top at +2.0 m, and a thickness of about 2.3 m for the slightly sloping walls. Later on, Nebuchadnezzar claimed that Nabopolassar actually built two embankments, not one. There is archaeological evidence for that in the palace area in the northwest corner of the eastern inner city, but not elsewhere.

There are also some remains of an earlier embankment 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).

The embankment along the east shore of the river is assumed to have a base at −5.0 m. It had a walkway some 1.1 to 1.5 m wide at the height of about −1.4 m, and its top surface was 3.6 m higher at +2.0 m. The total thickness was about 3.9 m. There were no towers or similar constructions. An interesting, characteristic feature of the embankments of Nabopolassar is the always-rounded corners (Figs. 2.10, 2.18, 2.21).

Gates

Four gates have been archaeologically located on the eastern inner city wall. According to cuneiform texts, there should be another four gates on the western city wall, but owing to lack of excavation they have not been located precisely. It is here assumed that they are of the same type as the eastern gates and follow the order of the Tintir text (Figs. 2.1, 2.2 for maps, most other figures for pictures). The mudbrick double gates can be regarded as expansions, both in plan and elevation, of the two city walls of mudbrick, including their towers. All excavated gates have the same approximate size: a 50–54 m-long passage with a 13–14 m deep front gate and a 33–37 m deep main gate, with 2–4 m in between. A long ramp, with walls of baked brick, with a short bridge served as the entrance to every gate over the 80 m-wide moat at the level of the embankment. The top of the front gate in the wall Nēmet-Enlil is reconstructed as being at +14 m, with additional towers, and the gate in the main wall Imgur-Enlil is treated as having the top of the wall at +18 m, also with additional towers and crenellations.

52 Wetzel 1930, 30–38.
53 80 m wide moat, e.g. Wetzel 1930, 30; the 40 m in Wetzel 1930, 70, seems to be a mistake.
54 E.g. Langdon 1912, Nebukadnezar 1; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 31.
55 Wetzel 1930, 32–33, 40 fig. 1, pl. 11, with the so-called Arachtumauer 1 and 3.
56 Wetzel 1930, 64–65, pl. 11; Frame 1995, Sargon II B.6.22.1.
58 George 1992; Wetzel 1930, pls. 53, 54.
2.2 City walls during Nabopolassar’s reign, with earlier remains

Fig. 2.13. West Babylon, looking east, during Nebuchadnezzar’s reign. It is surrounded by a moat, embankment, and double mudbrick city wall (Imgur-Enlil and Nēmet-Enlil). These have not been excavated here but from ridges in the landscape and ancient texts are assumed to be similar to the excavated wall on the other side. To the right is King’s Gate (red) and to rear left, near the Euphrates, Enlil Gate (yellow). The river flows from left to right in front of the palaces and the ziggurat. Model: Pedersén.

**Walls around the South Palace**

The walls around the South Palace\(^{59}\) during the reign of Nabopolassar are problematic. This is partly due to lack of excavations at these levels and partly because, according to inscriptions, the construction was taken away by Nebuchadnezzar. According to the inscriptions of Nebuchadnezzar,\(^{60}\) he dismantled the palace of Nabopolassar that had been built in unbaked mudbrick (*libittu*) and rebuilt it in baked brick (*agurru*). (This is discussed in more detail in Section 3.2.1.) Koldewey assumed that the baked brick wall standing several metres high, with small-format bricks, formed the foundations for walls of mudbrick standing at +8.0 m. However, the door openings in the brick walls at ca. +2.0 m in the south part of the east wall and the west part of the south wall, and the levels at the nearby Ištar Gate, would be much easier to explain with a level of Nebuchadnezzar’s first palace at +2.0 m, approximately the same as the nearby Processional Way at that period. The mudbrick palace of Nabopolassar would have been on the same level, or lower. (see Sections 3.2.1 and 5.6)

**East walls along the outer city**

The planning and construction of the eastern outer city wall started under Nabopolassar, but it was Nebuchadnezzar who completed the large project. According to an inscription

---

\(^{59}\) Koldewey 1931, 3–25.

\(^{60}\) E.g. Langdon 1912, 136–137 Nebukadnezar 15; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2.
of Nebuchadnezzar, his father Nabopolassar built the 7 m-wide mudbrick wall (dūru) and dug a moat provided with a bank of baked brick (agurru). As seen below, Nebuchadnezzar completed the work and added the massive embankment (kāru).61

---

61 Frame 2014; Weiershäuser – Novotny 2022, Nebuchadnezzar II 21.
2.3 City walls during Nebuchadnezzar’s reign

This section treats the numerous wall-building projects during Nebuchadnezzar’s reign. The attested measurements used for the digital model are discussed, along with the interpolations between known measurements. What is called a reconstructed measurement is the best possible guess in order to get a coherent model.

The city walls in Babylon at the time of Nebuchadnezzar II were, in some parts, more or less identical with Nabopolassar’s, but (owing to the enlargement of the city with an outer city wall and the expansion of the palace areas) the city walls were given a much more advanced construction (Figs. 2.1, 2.2). The inner city had the somewhat modified double mudbrick walls, Imgur-Enlil and Nēmet-Enlil, now with a double embankment of baked brick, giving a total thickness of about 40 m, with the moat of some 80 m width outside. The new outer city wall had a single mudbrick wall and a heavy embankment. The complete outer wall construction was about 30 m in thickness with a 80 m moat outside. When the palace area was expanded, the embankments nearby went out of use and new, much more massive embankments from 12 m up to perhaps 29 m thick, combined with the palace walls, were constructed.

2.3.1 The mudbrick walls

The city walls and gates of unbaked mudbrick were essentially a continuation of Nabopolassar’s work with the addition of the walls and gates around the eastern outer city.

*Imgur-Enlil and Nēmet-Enlil around the inner city*

With the expansion of an eastern, outer part of Babylon during the reign of Nebuchadnezzar, it is appropriate to speak of the traditional city encircled by Imgur-Enlil and Nēmet-Enlil as the “inner city”. The huge, 6.5 m-thick mudbrick main wall (*dūru*) Imgur-Enlil and the lower, 3.7 m-thick mudbrick front wall (*šalḫū*) Nēmet-Enlil remained, during Nebuchadnezzar’s reign, essentially as completed by Nabopolassar (Figs. 2.11, 2.12, 2.13, 2.17, 2.19, 2.20, 2.22). The walls may have been somewhat raised and several times repaired, but this has not been shown in the model.\(^62\) Only in the areas bordering the Istar Gate has the necessary raising of the wall (in connection with the raising of the levels of the palace and the gate) been accounted for.

*East wall along the outer city*

A new, ca. 7.5 km-long, external city wall (Figs. 1.4, 2.1, 2.14, 2.15, 2.16, 3.43) was originally planned by Nabopolassar and essentially built by Nebuchadnezzar, but this has been only partially excavated. It consisted of a single 7.0 m-thick mudbrick wall (*dūru*), with a heavy embankment of baked brick along the moat, surrounding the outer city and approximately doubling Babylon’s size (Figs. 1.1, 1.2). The mudbrick walls can

\(^62\) Wetzel 1930, 7–29.
be followed as a ridge in the landscape, and the German excavations partly unearthed some 800 m. The southwestern end of the wall is more uncertain than the rest of the alignment. The base of the wall was at about ±0.0 m, with a reconstructed height of 13 m with an additional 2 m of crenellations. There were alternating large and small towers (14.8 × 8.5 m and 10.4 × 8.5 m) along the wall.  

North wall inside the outer city

A wall of mudbrick was excavated some 60 m from the river, going east, approximately in the middle of the outer city (Figs. 2.1, 2.16). After a distance of some 450 m with limited traces eastwards, no further trace of a ridge can be distinguished. The wall probably continued and may have turned south, meeting the city wall around the inner city. The base of the 5.8 m-thick wall was at about ±0.0 m with a reconstructed height of 6.0 m. There were alternating large and small towers (9.4 × 7.4 m and 7.4 × 7.4 m) along the wall.  

Only the 450 m stretch has been considered here. A provisional dating to the reign of Nebuchadnezzar is here assumed. It remains to be established whether the wall was originally an extension of the inner city wall, or a subdivision of the area enclosed by the outer east wall.

Mudbrick gates

Most of the mudbrick gates retained the previous plan and measurements as discussed

---

63 Wetzel 1930, 70–74, pls. 58–60, 80.
64 Wetzel 1930, 69, pls. 4, 57.
above for Nabopolassar (Section 2.2) but may to some extent have had a slightly raised level (Figs. 2.1, 2.2 for maps, most other figures for pictures). The only known exception, attested by excavations and cuneiform texts, was the completely rebuilt Ištar Gate in baked brick on higher levels (treated separately below). A similar, but not so high, raising of the street through the Uraš Gate in the south is attested in a cuneiform text but, so far, no archaeological evidence has been found supporting its actual construction. For both gates, see Section 2.4.

Owing to the limited excavations of the eastern external wall, none of the five gates mentioned in a cuneiform text has been archaeologically attested. Their placements, according to the text, allow them to be approximately plotted along the wall. These gates can be regarded as expansions of the city wall of mudbrick, comparable with the double gates in the double mudbrick city walls around the inner city. A second gate building for each gate was probably situated in the massive embankment. It must be assumed that a long ramp, with walls of baked brick, with a short bridge served as entrance to each of the gates over the 80 m-wide moats, similarly to the inner city wall; however, none of them have been traced by excavation.

2.3.2 The baked brick walls
The city walls of baked brick were heavily expanded during Nebuchadnezzar’s reign

---

Wetzel 1930, 57–60.
George 1992, 137–141.
with massive embankments, walls around the palaces, and at least one city gate, the Ištar Gate (treated in Section 2.4).

**Embankments along the moats**

During Nebuchadnezzar’s rule, new embankments (kāru) of baked brick with square corners and towers covered the previous embankments with rounded corners from the reign of Nabopolassar (*Figs. 2.1, 2.2, 2.7, 2.11, 2.12, 2.13, 2.17, 2.19, 2.20, 2.22, 2.38*).
The additional walls\(^67\) were somewhat wider and higher, base \(-5.0\) m, thickness \(3.3\) m, and reconstructed height \(9.0\) m, giving the top at \(+4.0\) m. The towers, with a width of \(8.0\) m, extended \(5.0\) m into the moat. It is here assumed that the extra height was a superstructure of baked bricks above the embankments and the corresponding towers; the excavators assumed instead one of unbaked mudbrick. The remains of baked bricks next to the Uraš Gate are here interpreted as belonging to such a structure. Nebuchadnezzar described his embankment of baked brick as high as a mountain (šadâniš) with extruding or high-rising towers (dimâti āṣâti). The extreme height of the embankment in the palace area next to the Ištar Gate has already been discussed in Section 1.5.2 (Figs. 1.11, 1.12).\(^68\)

In the outer city, the embankment (kāru) along the east mudbrick wall next to the moat was excavated for no more than about \(5\) m in two trenches (Figs. 2.15, 2.16). It consisted of a massive \(7.8\) m embankment with an additional \(3.3\) m embankment of baked brick along the moat. It had a walkway at about \(+2.0\) m. It is assumed to have a base at \(-5.0\) m with an upper surface \(6.0\) m above the walkway at \(+8.0\) m. Owing to the extremely small excavation, towers were not attested. According to inscriptions, Nebuchadnezzar completed the moat with the massive embankment (kāru) to replace the bank (kibru) of Nabopolassar. The embankments are said to be 36 bricks wide, which would include the (so far unexcavated) towers. The height (or extrusion) of the extruding and high-rising towers (dimâti āṣâti) is said to be 25 ammatu (12.5 m). The excavators noticed the similarity of construction between this embankment and the so-called Nabonidus embankment along the eastern shore of the river, and assumed a similar construction with towers, as documented there. That interpretation has been followed here.\(^69\)

---

\(^67\) George 1992, 137–141.

\(^68\) Langdon 1912, Nebukadnezar I; Weiershäuser – Novotny 2022, Nebuchadnezzar II 31, 32.

\(^69\) Wetzel 1930, 70–74; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 16, 21, 32.
Fig. 2.21. The palace area, seen from the north, during the reign of Nabopolassar. The embankments have rounded corners and the walls around the South Palace are constructed with unbaked mudbricks. The Ištar Gate (violet) at this period is built with unbaked mudbricks. Model: Pedersén.

Fig. 2.22. The palace area, early in the reign of Nebuchadnezzar. The embankments have been rebuilt with towers and the walls around the South Palace have been constructed with baked bricks. The Ištar Gate (light green) has been rebuilt with baked bricks and relief decoration. Towers (cf. Fig. 2.26) stand where the embankments reach the Processional Way in front of the gate. Model: Pedersén.
2.3 City walls during Nebuchadnezzar’s reign

Fig. 2.23. The palace area, towards the middle of the reign of Nebuchadnezzar. The palace area has expanded westwards into the river and in a northern direction into the previous moat. The Processional Way and the Ištar Gate (dark green) are on a higher level and the rebuilt gate has relief decorations. Model: Pedersén.

Fig. 2.24. The palace area during the middle of the reign of Nebuchadnezzar. The palace area has expanded in a northern direction into the previous moat with the development of the North Palace. The Processional Way and the Ištar Gate (yellow) are on a higher level and the rebuilt gate has relief decorations. Model: Pedersén.
Embankments on the eastern shore of the river

Nebuchadnezzar’s new embankments (kāru) of baked brick with square corners (Fig. 2.1, 2.2, 2.19) continued beside Nabopolassar’s embankment along the river in a similar way, but without towers, except for the ones at the north and south corners. The wall, with its base at −5.0 m, and a thickness of 5.25 m, had at −0.4 m a walkway 1.65 m wide. The continuation upwards of the wall was 3.6 m thick and had a reconstructed height of 3.5 m, with the top at +4.0 m. In the north section of the embankment, the two walls separated from each other, and west of the South Palace the distance between the walls was 20–25 m. The middle section of the embankment next to the bridge over the river is problematic (possibly owing to lack of excavation); either the embankment of Nebuchadnezzar may never have been erected here, or it may have been pulled down in connection with a later building project. For the bridge see Section 5.2.

As noted above, the German excavators noticed the similarity in construction between what they called the embankment of Nabonidus (Figs. 2.1, 2.2, 2.16, 2.20, 2.25, 2.27, 4.1, 6.2, 7.16, 7.18) along the eastern shore of the river, and the embankment along the outer city’s moat. They were open to the possibility that, even if Nabonidus completed the embankment at the river, as brick inscriptions suggest, the construction of the wall may have started during Nebuchadnezzar’s reign. As further noted above, the

---

Fig. 2.25. The palace area at the end of Nebuchadnezzar’s reign and during that of Nabonidus. The palace area containing the North Palace is further expanded in a northern direction into the earlier moat. The Processional Way and the I štar Gate (blue) are on a higher level and the façades are of glazed brick with relief decorations. A North Gate (red) protects the area with glazed brick decorations. Model: Pedersén.

---

70 Wetzel 1930, 44–48.
71 Wetzel 1930, 48–53.
German excavators found bricks of Nebuchadnezzar, Neriglissar, and Nabonidus in situ in the so-called Nabonidus wall. This embankment, 7.6 m thick, had a walkway 3.5 m wide at +0.5 m. The base is assumed to be at −5.0 m, with a reconstructed top at +10 m. It had towers and an upper protective wall here considered to be of baked brick. In addition to the main gate at the bridge over the river, there were a number of small doors leading from the smaller city streets to the embankment.

Walls around the South Palace

Early in his reign, Nebuchadnezzar had the mudbrick walls of the South Palace demolished and new walls of baked brick constructed (Fig. 6.2). According to his inscriptions, this had been discussed already under Nabopolassar. The base of the foundations of the baked brick walls around the palace was reconstructed at −3.0 m, with floors at +2.0 m, later raised to +8.0 m; in the eastern part floors were further raised in stages to +12.0 m and +13.0 m. In the western part, the floors were probably raised in a similar way, as suggested by the excavator, but the destruction has been much greater there. The walls are assumed to have been standing some 10 m above the highest floor level, giving the top at about +23.0 m. The areas outside were sometimes several metres lower, giving the impression of an even higher wall from the outside. The wall around the palace is further discussed, together with the palace itself, in Section 3.2.

Embankments northwest of the South Palace and around the North Palace

These walls were called embankments (kāru) in inscriptions, but some of them might, from a modern architectural point of view, also be taken as external palace walls. Owing to their sometimes extreme thickness, the reconstructed height suggested here might turn out to be too insignificant.

Northwest of the South Palace, the first step of Nebuchadnezzar’s series of embankments of baked brick along the river comprised of a double embankment (Figs. 2.22, 6.2). The 3.5 m-thick inner of the two was the continuation of the abovementioned embankment along the moat. Next to the Processional Way, it has today a magnificent preserved height of +15.2 m (Fig. 1.12, new measurement by BDWG), indicating that this part of the wall was not a normal embankment, but rather served as an intermediate wall within an area of steep elevation change (discussed below). If the reading and interpretation of 43 ammatu (cubits), or 21.5 m, as the height of the embankment in texts is substantiated, this could – assuming our standard −5.0 m base for the wall – give a maximum height of +16.5 m for this embankment according to our calculation procedure.

The outer of the two walls was an embankment of baked brick, with base at −5.0 m,

---

72 Wetzel 1930, 8, 52, 72.
73 Wetzel 1930, 48–53, pls. 46–49.
74 Koldewey 1931, 3–25.
75 Langdon 1912, Nebukadnezar 21; Weiershäuser – Novotny 2022, Nebuchadnezzar II 22.
6.8 m thick and with an assumed height of 10 m, giving a top at +5.0 m, which was built up to 14 m in front of the inner embankment. A series of towers (11.8 × 8.0 m) protected the north embankment along the moat, with a large (15.7 × 15.9 m) tower at the north-west corner, but no towers are attested along the river. Massive towers or bastions were constructed in the corner between the embankments and the Processional Way (Figs. 2.22, 2.26, 6.2). The wall consisted of three sections: one along the river; another from the river to the Ištar Gate; and a third east of the gate. Sometimes this double embankment has been seen as two individual construction steps.76 This is questionable, because the lower part of the inner tower at the Processional Way, which may have been in contact with water, was made of unbaked mudbrick. The only way to explain this is to treat the two walls as a single wall of double form. Otherwise we have a severe construction mistake.

Dependent on where the measurement was done, the 21-brick wall mentioned by Nebuchadnezzar may be the inner 3.5 m-thick embankment when also the towers are

---

76 E.g. Pedersén 2011; the interpretation here means that the first step of construction of Nebuchadnezzar in that article may not exist. Wetzel 1930, pl. 54a, cannot be correct, as the missing first embankment there, today still stands up to +15.2 m.
included or the outer 7 m-thick embankment without towers. 77

A second step was the so-called West Fortification, a massive fortification (ḫalṣu) in the river west of the South Palace with 18 m- and 21 m-thick baked brick walls, reconstructed here with its base at −5.0 m and (quite provisionally) a top at +18 m (Figs. 2.23, 3.2, 6.2). In the inscriptions, 78 it is referred to as having the foundations in the subterranean water (apsû), here obviously the sandbank of the river. The upper parts and the purpose of the massive building have not been established. In the German archaeological publications, it is called “Westliches Vorwerk im Fluss” (see Section 3.4). 79 A (perhaps never completed) massive, 17 m-thick baked brick wall (Figs. 2.23, 3.2, 3.26, low wall crossing under the middle of the North Palace of the next step), with an assumed depth of −5.0 m reaching up to +8 m, connected the West Fortification with the Processional Way some 100 m north of Nēmet-Enlîl. 80 According to the text, its foundations were in the subterranean water (apsû), here obviously the sandbank of what previously was the river and a moat. On a terrace of packed brick between Nēmet-Enlîl and the wall, the first version of the North Palace was planned to be placed (see Sections 3.1, 3.3.1).

The third step of the expanded embankments (Figs. 2.24, 3.3, 6.2) of baked brick in this area was the massive 12 m wall, with reconstructed base at −5.0 m, reaching up

78 Langdon 1912, Nebukadnezar 7, 13; Da Riva 2012, 53–54; Weiershäuser – Novotny 2022, Nebuchadnezzar II 12.
80 Koldewey 1932, 25–27.
to +18 m. This was the north wall of the expansion of the North Palace, extending the area in the previous step in a northern direction. The wall, with its north façade 180 m north of the north front of the Ištar Gate, was the north enclosure wall of the central part of the North Palace west of the Gate and the Processional Way. In inscriptions of Nebuchadnezzar, it is described as 360 ammatu (cubits), or 180 m, north of Nēmet-Enlil; there were two strong embankments (kāru dannu) from the Euphrates to the west (in inscriptions: “left”) side of the Ištar Gate. These embankments, or what was placed above them, were also described as a wall (dūru) high as a mountain (šadāniš) (see Sections 3.1, 3.3). The inscriptions give reference to the strong wall (dūru dannu) of baked brick east (inscriptions: “right”) of the Gate and the Street, also 360 ammatu (cubits) from Nēmet-Enlil. This fortification east of the Processional Way is called “Östliches Ausfallvorwerk” in the German archaeological publications (see Section 3.5, East Fortification). Some more details can be found in another inscription, giving the thickness of the walls as 32 bricks and 23 bricks. This could be the same wall that runs eastwards from the river to the Processional Way, and then continuing southwards to the Ištar Gate. This time the inner distance 335 ammatu, or 167.5 m is given, as more details inside the palace follow in the text (Section 3.3.3).

The fourth and final step of embankments in baked brick was the northernmost wall of the once again extended palace area (Figs. 2.25, 2.27, 3.4, 6.2). The wall, called “Mauer mit der Kalksteinverbräumung” in German archaeological publications, had the north façade some 245 m north of the north front of the Ištar Gate. In Nebuchadnezzar’s inscriptions, it was denoted as another strong embankment (kāru dannu), 490 ammatu (cubits), or 245 m, from Nēmet-Enlil. It is described as a strong wall (dūru dannu) of baked brick and bitumen with a massive wall (dūru rabû) of strong stone (abnu dannu) beside it. This massive wall of baked brick was 17.5 m thick, with an assumed base at −5.0 m, reaching up to +18 m. On the outside, its lower parts consisted of huge limestone blocks marked with inscriptions on the front next to the water in the moat (Fig. 1.7). The wall was later strengthened on the inside by an additional 4 m-thick wall, and on the outside by a 7.5 m-thick wall, both of baked brick, making the total wall construction (at least in the lower parts) 29 m thick. It is interesting that the only extremely long and detailed royal inscription from Babylon written on a stone tablet, and not on clay, found in three exemplars, concerned the construction of the limestone wall of the North Palace (see Sections 3.1, 3.3).
Walls around the Summer Palace

The palace called the “Summer Palace” by the German excavators (Figs. 2.1, 2.16, 3.44) was described in inscriptions as a palace for the protection of Babylon (ekallu ana nisirti Bābili), i.e. an arsenal. It was constructed by Nebuchadnezzar at the northernmost corner enclosed by the east wall around the outer city and bordered on the west side by the embankment. It is presently the highest ruin still standing in Babylon. Only the walls around the palace are of interest here. According to Nebuchadnezzar’s inscriptions they were 60 ammatu, or 30 m, high, probably measured from the base of the foundation. The base of the foundations was assumed to be at −3.0 m; floors are attested at +21.0 m. The height of the walls is here assumed to be up to +30 m. According to the inscriptions the walls should be of baked brick and bitumen. This is true for the lower parts, but the upper parts attested in excavations are of baked brick and lime-gypsum mortar. For the palace itself, see Section 3.7.

2.4 The Ištar Gate area during Nebuchadnezzar’s reign

The Ištar Gate (UTM 44°57'35"E 36°01'03"N, Kasr 6–7s) had the full name Ištar-sākipat-tēbîša, “Ištar overthrows its assailants”. During the reign of Nebuchadnezzar, the gate developed step by step from a simple city gate at the north end of the city (Fig. 2.22) to an advanced decorated gate with a 180 m section of Processional Way enclosed by a new North Gate (UTM 44°57'35"E 36°10'35"N, Kasr 6–7s), all now within an expanded palace area in the middle of the enlarged city (Figs. 2.23, 2.24, 2.25, 6.2). The Ištar Gate was completely rebuilt with baked brick in several steps during the reign of Nebuchadnezzar and developed into a monumental gate with magnificent architecture. Nebuchadnezzar replaced the earlier mudbrick gate with one in baked brick, with decorations of several lines of relief bulls (rīmu) and dragons (mušḫuššu). The ca. 33 × 33 cm, good-quality baked bricks have stamped inscriptions of Nebuchadnezzar, dating all levels where the bricks were attested to his reign. How early in his 43-year reign this size of brick started to be used has not been established, but possibly not right at the beginning. The level of the Processional Way passing through the gate was raised several times, like the gate itself and the palaces nearby. The uppermost level of the gate had a façade of blue-glazed brick decorated with bulls and dragons in glazed, coloured relief. Inscriptions of Nebuchadnezzar, on the other hand, place more focus on the placing of copper (erû) bulls and dragons at the doorjambs (sippu) at the city gates.

The Ištar Gate measured a total length of 50 m along the street and consisted of

---

87 Koldewey 1932, 41–62.
88 Langdon 1912, Nebuchadnezzar 14; Weiershäuser – Novotny 2022, Nebuchadnezzar II 23.
89 See Pedersén 2020 for more details.
90 Koldewey 1918.
91 Langdon 1912; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 4, 19, 21, 32.
Fig. 2.28. Ishtar Gate area with front gate building (blue) and main gate building (yellow) of baked bricks connected to the front and main city walls of mudbrick. The Processional Way had limestone (gray) and breccia (reddish) pavements. Time of Nebuchadnezzar II with some earlier and later constructions. In front of the gate are shown eight pedestals: 1, 2, 4, 5, 7 are attested, 1, 2, 5 still visible. 20 m UTM coordinate grid on map. Cf. Fig. 6.2. Map: Pedersén.

the front gate of $13 \times 28$ m and the main gate of $33 \times 22$ m, with 4 m in between. The two gate buildings were covered by roofs. The main gate building, associated with the main city wall, was the largest, with the most massive and highest walls (Figs. 2.28, 2.29 yellow marking). When arriving at the city from the north, visitors first reached the front gate associated with the front city wall (Figs. 2.28, 2.29 blue marking). German excavations unearthed the front gate and the upper part of the main gate in 1902. Iraqi
excavations continued down within the main gate in 1938.\textsuperscript{92}

Before the gate was an open space, to the uppermost levels of which three staircases led on the east side and one on the west side from the lower areas between the front city wall and the embankments (Figs. 2.28, 2.32). The Processional Way within the gate, on higher levels at least, was paved with slabs of limestone bordered on either side by breccia stone (see Sections 5.7, 5.8).

In front of the gate stood a series of pedestals, which are more or less well preserved (Fig. 2.28, 2.32). They were probably placed in pairs, although only in the first, northern pair are both preserved. Of the eight pedestals, 1, 2, 4, 5, 7 are archaeologically attested, and 1, 2, 5 are still visible on the site. German excavations uncovered pedestals 1, 4, 5 and 7, and Iraqi excavations pedestal 2, on different levels and in different states of preservation. The others are placed here according to the usual symmetry. The pedestals were raised perhaps a metre or so above the street level and some kind of statue or symbol stood upon each. We have already seen references to copper bulls and dragons at the doorjambs (sippu). This may be what stood just before the front gate (3, 4) and the main gate (7, 8). Whether this was also true 14 m north of the front gate (1, 2) and

\textsuperscript{92} Koldewey 1918; Baqir 1961, 6.
inside the same gate (5, 6) is not clear. Perhaps a royal statue stood somewhere. The first pedestal (1) on the west side is quite special: it is round, whereas all other Neo-Babylonian constructions are square, as the bricks normally are. They all seem to have been founded at the same level as the gate and raised when the gate was raised to higher levels.93

The four archaeologically attested street Levels 5, 4, 3, 1 at the front gate of the Ištar Gate complex (Fig. 2.29) are ca. −2.7 m,94 +7.2 m, +10.8 m, and +15.4 m.95 The street level best preserved today in Babylon, and exposed for some 500 m in the palace area, is Level 3, at +10.8 m. Both the street levels and the decorations of the gate have a slight slope, resulting in somewhat higher levels at the larger south gate. All these levels, as well as other intermediate levels, seem to be dated to different reconstructions during the reign of Nebuchadnezzar. This has been shown by the remains of an archive of clay tablets found at ca. +1.2 m at the northeast tower of the Ištar Gate above street Level 5.

---

93 Koldewey 1918, 10, figs. 2, 6, 8, 10, pls. 1–7. WMF could 2015 in connection with the conservation of the round pillar establish that the foundation continues down and was just narrower in the section inside the mudbrick wrapping.

94 Wetzel – Schmidt – Mallwitz 1957, 27, elevation estimated from the feet of the animal.

95 Koldewey 1918, 8.
The tablets treat the administration of barley, dates and other foodstuffs during the reign of Nebuchadnezzar years 8–12, which gives an earliest possible date for the infilling of Level 4 as his year 12, i.e. 592 BC.96

A cuneiform inscription on three clay cylinders from the Iraqi excavations (Section 5.4)97 records successive fillings in order to raise the Processional Way: first 6 ammatu (cubits), or 3.0 m; then 18 ammatu, or 9.0 m; and finally 17 ammatu, or 8.5 m. This makes a total of 41 ammatu, or 20.5 m, during the reign of Nebuchadnezzar. These measurements can only fit the levels at the Ištar Gate. If we assume an additional Level 6 at the feet of the lowest line of decorative animals on the gate below the lowest archaeologically attested street level, there is approximate agreement between the tablet and the archaeologically attested street Levels 5, 4 and 1 within a deviation of a few decimetres. The only apparent exception is that the presently best-attested street Level 3, at +10.8 m, has no equivalent on the tablet. “Well preserved” may not equate to “important” in ancient times. A level that was quickly covered by an additional layer of fill, and hardly exposed, may not have been considered interesting in ancient times; but on the other hand, this may explain why it is so well preserved. (More on the street levels in Section 5.7.)

The same cuneiform inscription also refers to the raising of the Processional Way in the southern direction through the Uraš Gate by the same 6 ammatu (cubits), or 3 m, and 18 ammatu, or 9.0 m, but not the uppermost 17 ammatu. As there is no archaeological evidence from the Uraš Gate indicating that this was really constructed in a way similar to the Ištar Gate, this has not been considered in connection with the present presentation (Fig. 2.12).

There exist other divisions of the levels of the Processional Way. In the exhibition in the Vorderasiatisches Museum Berlin, a division has been made into three construction levels (Baustufe) according to type of wall decoration. The first level, in unglazed brick, corresponds to excavation Levels 4 and 3. The second level corresponds to excavation level 2, and the third corresponds to excavation Level 1.98 A recent Iraqi division agrees with the first three of the excavated levels but adds an additional level before the uppermost.99

The ruins now standing in Babylon (Fig. 2.30) were never exposed in ancient times as they can be seen today. All levels lower than the street level in use at the time were covered by earth, both inside and outside the gate. Each level of the Ištar Gate consisted of a lower, reconstructed 14–15 m-high front gate, forming part of the front wall (šalḫû); and a higher, reconstructed 18–20 m-high main south gate, forming part of the main city wall (dūru). Both had additional towers and crenellations, just like the other gates constructed in mudbrick. The Ištar Gate of Nebuchadnezzar, however, was constructed of baked brick. The same material was used for the ca. 20 m sections of

97 Ismail 1985; Damerji 2012, 61; Weiershäuser – Novotny 2022, Nebuchadnezzar II 34.
99 Damerji 2012; following Al-Kassar 1985.
walls connecting the gate with the double city walls (Fig. 2.28). The gate was rebuilt each time in connection with higher street levels. Each rebuilding seems to have started with a more or less complete demolition of the gate above the new higher street level, as indicated by the changed wall, including protrusions of wall sections from and above different street levels. This would be difficult to explain unless the wall was demolished and reconstructed from each new street level.\footnote{Pedersén 2018b.}

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 row of animals is distributed (either attested or by means of analogy) on the walls as follows: 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; 31 on the uppermost level of the front gate; and 8 on the uppermost level at the façade of the sections connecting the gate with

---

**Fig. 2.31. View looking south through the 4.6 m wide door opening of the North Gate of Level 1 at the protected street area, with glazed bricks and relief decoration showing lions facing towards those entering the Ištar Gate. Cf. Figs. 2.36, 2.40. Model: Pedersén.**
Fig. 2.32. Ištar Gate on the uppermost level, with late afternoon light. The height of the 4.6 m wide door opening under the arch corresponds to five rows of animals (four rows of animals plus decorative bands). Pedestals 1, 2, and 4 in front of the gate had a statue or symbol standing on the top. Cf. Fig. 2.35. Model: Pedersén.

the mudbrick wall. Traces of another dragon seem to indicate another level of 8 animals above the uppermost bulls there. All this would give a total of 445 relief animals in baked brick without glaze. Most of them (253) are bulls and the remaining 192 are dragons.

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 Level 5 street, 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 of better quality due to finishing. It was later covered with gypsum perhaps as an experiment with enhanced visibility. Above this, the excavation revealed remains of a line of animals in coloured glazed brick without relief. This is the remains of a street Level 2 which is not preserved in the Ištar Gate, but only in the north at the North Gate. In the east side of the front gate were the 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 stated, five lines of animal decoration, which together have a height of 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 and a proportion between width and height of 1:2.6 or 1:2.7. This is in good agreement with what can be seen on Assyrian reliefs (briefly presented in Section 2.1.3 above) and with the Babylon palace door discussed in Section 1.5.2, which has a proportion of 1:2.8. If this were to be accepted, then in most of the modern reconstructions of the Ištar Gate the door openings would be too low (Fig. 2.32).\(^{101}\)

Above the uppermost archaeologically attested street Level 1 at the gate, no remains of any wall existed at the time of excavation, but remains of the street Level 1 could be established north of the Ištar Gate and north of the North Gate.\(^{102}\) The German archaeologists assumed that the Level 1 gate once was adorned by glazed brick reliefs depicting bulls and dragons. The tens of thousands of fragments of glazed relief brick found scattered around this area after the brick miners had cut off the glazing from the mined bricks must represent their remains.

It is not known how many lines of animals in glazed relief brick decorated the original gate on the uppermost street level. In the Vorderasiatisches Museum Berlin, the famous

---


\(^{102}\) Koldewey 1918, pl. 5a; Pedersén 2018a; Pedersén 2020.
Fig. 2.34. The palace area in Babylon, looking south. The highest Nebuchadnezzar Level 1 of the Processional Way with the North Gate (red), 180 m-long street with glazed brick decorations including lions on the walls, and the blue-glazed Ištar Gate (blue) with decorations of bulls and dragons. To the right is the North Palace, behind it the South Palace, and behind that, the ziggurat of the Marduk temple. Model: Pedersén.

full-scale reconstruction has five lines of animals on the façade and three in the door opening (Fig. 2.35); in Koldewey’s publication one plate shows six or seven lines of animals on the façade and two or three in the door, but in the same publication there is another suggestion with eight lines of animals on the façade and four in the door. In our reconstruction, taking into account the decorative bands above and below, four lines of animals have been placed in the door opening following the discussion above, and on the façade there are six rows of animals (Fig. 2.32).

We follow here the German excavators in taking the Level 1 and lower levels as from Nebuchadnezzar. Koldewey mentioned that above these levels there was a later, possibly Achaemenid, reworked horizontal level of brick fragments here called Level 0. As there is hardly any information about this level, it will be mostly disregarded in the following.

103 Koldewey 1918, pl. 19.
104 Koldewey 1918, pl. 9.
The street levels are discussed in more detail in Section 5.8.  

Some 180 m north along the Processional Way, Iraqi archaeologists unearthed the remains of a massive, some 30 m-long, North Gate (UTM 445735E 3601035N, Kasr 6-7s, Figs. 2.33, 2.34) protecting the two upper Nebuchadnezzar Levels 1 and 2 of the Processional Way up to the Istar Gate. A temporary gate of unbaked mudbrick existed for Level 2 a few meters south thereof. Its upper parts were levelled by the Level 1 street. The remains of the mudbrick gate were first exposed by German excavators and later further excavated and removed by Iraqi. Level 1 had the glazed walls with relief lions along the street, and the Istar Gate decorated with blue-glazed façades with relief bulls and dragons. The second Level 2 was the one with a blue-glazed gate with bulls and dragons without reliefs and no decoration along the street. For the street itself and the relation to the North Gate buildings see Section 5.8.

The two walls (Fig. 2.31) already referred to, stretching some 180 m to the north on both sides of the Processional Way, had, at the uppermost Nebuchadnezzar street Level 1, decoration in glazed brick with reliefs showing lions in long rows facing towards visitors entering the gate area from the north. No such lions, and no glazed bricks at all, were found on the remains of the walls still standing. Parts of the original walls corresponding to Level 3 can still be seen in the modern reconstructed walls along the street, and these are only flat baked brick walls, which excludes any type of relief decoration on the lower part of the original walls here (Figs. 5.32–5.34). All standing wall sections were part of an earlier Level 3 without decoration, or just lower parts of the foundations. In contrast to the Istar Gate, there were no lions in unglazed brick on the walls. What we know about the decoration is reconstructed from the tens of thousands of glazed brick fragments cut away by brick miners and found in the area of the street. The excavators calculated there had been some 60 lions on each side of the ca. 20 m-wide street, giving a total of approximately 120 lions.

2.5 City walls after Nebuchadnezzar
In this section, additional walls erected after the reign of Nebuchadnezzar and the subsequent history of the walls will be considered.

Subsequent constructions
The massive, 7.6 m-thick embankment of the inner city along the east shore of the Euphrates has been discussed in Section 2.3 above. The German excavators called it the embankment of Nabonidus. The bricks in the wall bear inscriptions of Nebuchadnezzar, Neriglissar and Nabonidus, and the excavators considered the possibility that

105 Koldewey 1932, 37–39, pls. 24–27. There is very little documentation about the upper levels and no proper study.
106 Al-Kassar 1985; Pedersén 2020.
107 Koldewey 1932, 39; Pedersén 2020.
Nebuchadnezzar started the work because of the similar construction of the outer city’s Nebuchadnezzar embankment along the moat. This is the position taken here.\(^{108}\) Before the German excavation, it was noticed that there was a continuation of an embankment, with Nabonidus brick inscriptions, along the east shore of the river all the way up to the Summer Palace. Brick miners had removed almost all of this wall in the years before the German excavations started, but a small section may have been unearthed.\(^{109}\)

As stated in Section 2.1.1, the main late construction works – according to preserved royal inscriptions – were the repair of a section of the eastern inner city wall Imgur-Enlil by Nabonidus, and the work on Imgur-Enlil and the embankment (kāru) along the moat by Cyrus II (538–530 BC). The work by Cyrus is also referred to in the Verse Account. It has not been possible to identify any of these described works among the archaeological remains in Babylon.\(^{110}\)

The city walls, or at least an enclosable section of them, were still functioning in the Hellenistic and early Parthian periods. This is clear from the reference in the Astronomical Diaries for the year 123 BC, saying that the city gates were closed because of fighting with Arabs. Closing the city gates for security would, of course, require that the corresponding walls were intact. It is not clear, however, if this refers to the complete old traditional city walls or a section thereof, or some other kind of structure.\(^{111}\)

A late, 4 m-thick mudbrick wall with a gate connected the city wall Imgur-Enlil with the Ninmah temple. A continuation of the wall with another gate is attested southeast of the temple. According to the excavators, this 6.5 m-thick wall may have encircled the southeast of the Kasr area, blocking the Processional Way and joining the southeast of the South Palace, possibly in the late Achaemenid or Hellenistic periods when the river had not only cut through south of the palace area but also flowed through the east outskirts of it, creating something like an acropolis more or less surrounded by water. The cutting of the terrain by floodwater south of the South Palace (including the Processional Way for some 150 m) is archaeologically well attested and can still be seen by observant visitors, but the dating is arguable (see Section 5.5). In the Parthian period, a 13 m-wide and 87 m-long pool or harbour in an otherwise 2.8 m-wide canal was constructed in the silt. Also in the Parthian or Sasanian period, massive mudbrick walls were built to surround the area of the previous Summer Palace (cf. Section 7.6).\(^{112}\)

*Disappearance of the walls*

Buildings of mudbrick could only stand for a limited time without maintenance and repair, as can also be seen in the 1980s reconstructions now standing in Babylon (Figs. I.11, 2.39). The massive mudbrick city walls gradually disintegrated owing to lack of

---

\(^{108}\) Wetzel 1930, 8, 52, 72.

\(^{109}\) Wetzel 1930, 69–70, pls. 2, coordinates Babil 49d–50d.


\(^{112}\) Koldewey 1911, pl. 3; Wetzel – Schmidt – Mallwitz 1957, 23–25, pls. 12, 13.
maintenance. The good walls of baked brick, especially from the reign of Nebuchadnezzar, were for centuries a source of building material. Extensive brick mining of all visible baked brick walls occurred before and up to the beginning of the German excavations. In many places, only the lower parts of underground foundations of baked brick walls were left for the excavators. It may be assumed that possibly some 80 or 90% of the good baked Nebuchadnezzar bricks had been taken away and reused elsewhere.

There were also deliberate attempts to cut down the mighty walls, e.g. as claimed by Sennacherib in 689 BC,\(^{113}\) or as reported later about Cyrus II (538–530 BC) and Darius I (521–486 BC).\(^{114}\) As stated above, the river overflowing parts of the city took away the city walls in several areas; details await future surveys and borings in Babylon. Deliberate destruction and reconstruction due to changes in the use of the buildings accelerated the walls’ disappearance. On the other hand, when walls went out of use and were covered by other walls or hidden under a new surface, this created the best conditions for preservation of ruins into modern times.

2.6 Full-scale reconstructions in Berlin and Babylon

In connection with and after the excavations, there have been several full-scale reconstructions of sections of the city walls and parts of city gates. These have been made both on the spot in Babylon and in the museum in Berlin. Much older was the first full-scale copy of the Ištar Gate, which – owing to its thicker walls – was even a little larger on the outside than the original. It had glazed brick walls with the same types of relief animals as in Babylon, and was erected in the Persepolis area after Cyrus’ conquest of Babylon in 539 BC. This ancient copy will not be discussed any further here, as it awaits renewed excavations.\(^{115}\)

Reconstructions in Berlin

In the Vorderasiatisches Museum Berlin, there are two main reconstructions, one of the lower north front gate building of the Ištar Gate, and the other of sections of the walls along the Processional Way. The original height of the Ištar Gate (Fig. 2.35) is not known, and the excavators themselves made alternative suggestions as already discussed. The façade of the gate as it stands consists of some 80% modern flat glazed coloured bricks produced in the Berlin area in the 1920s. Some 20% of the façade, including the 26 bulls


\(^{114}\) Berossos according to Josephus 1966, Against Apion I 152, claims that Cyrus gave order to destroy the outer walls of Babylon, but after that Nabonidus surrendered so it may never have happened. Compare above that Cyrus also rebuilt the inner city wall and the moat. Herodotus 1938 III 159, claims that Darius destroyed the city walls and their gates and adds that Cyrus did not do so. Both claims have been questioned by scholars, e.g. Rollinger 1998 with literature.

\(^{115}\) Chaverdi – Callieri – Matin 2016; Kaniuth 2018; Pedersén 2020.
2.6 Full-scale reconstructions in Berlin and Babylon

Fig. 2.35. Reconstructed front gate building of the Ištar Gate in VAM Berlin. The gate had been taken down by brick miners long before any excavations, and the bricks were reused for other buildings. German archaeologists collected glazed brick fragments and used them for the animals, the inscription and part of the lower decoration. The rest, 80% of the surface including all upper parts and all backgrounds, is of modern bricks made in Germany in the 1920s. Cf. Fig. 2.32. Photo: Olaf M. Teßmer (© Staatliche Museen zu Berlin – Vorderasiatisches Museum).

Fig. 2.36. Reconstructed section of the Processional Way Level 1 in front of the Ištar Gate in VAM Berlin. The street is 7 m wide instead of the original 20 m. For the same street level during excavations see Fig. 5.31. Cf. Figs. 2.31, 2.40. Photo: Olaf M. Teßmer (© Staatliche Museen zu Berlin – Vorderasiatisches Museum).
Fig. 2.37. View looking south. The area of the eastern inner city wall appears as a low ridge between the street and the 20 m-wide canal. Marduk Gate’s inner building (red), connected with the inner main wall, is rebuilt in baked brick instead of the original unbaked mudbrick. The 20 m canal follows approximately the route of the 80 m moat and gives a good idea of the ancient layout. Owing to the high modern groundwater level, there is a lake inside the southeast corner of the inner city. Photo: SBAH, WMF, March 2017.

Fig. 2.38. The same area as Fig. 2.37, looking south. Eastern inner city wall with 80 m moat with water, Nebuchadnezzar’s embankment of baked brick, and the front wall and the main wall both of unbaked mudbrick. Marduk Gate (red) and further on Zababa Gate (yellow), both of unbaked mudbrick. Model: Pedersén.
and 16 dragons, with some other decorations, and the cuneiform inscription were put together according to the types of original fragments discarded by the brick miners and placed in the modern gate fabric. The content of the original inscription is not known; what is now shown is put together according to another inscription of Nebuchadnezzar.116

In the same museum, there is also a reconstruction of a section of the 180 m-long walls (Fig. 2.36) on both sides of the upper Level 1 of the Processional Way north of the Ištar Gate. On each side of the full-scale reconstruction, 12 lions put together from small fragments of glazed relief bricks can be seen (compared with originally some 60 lions on each side). The width of the reconstructed street in the museum is only 7 m compared with some 20 m in Babylon. For another reconstruction of the lower Level 3 in Babylon, with the original dimensions of width and length, see the next section (Fig. 2.40).117

Reconstructions in Babylon

In Babylon itself, several full-scale reconstructions of the city walls and the gates were made in the late 1970s and early 1980s. All reconstructions have been made at the inner city wall east of the river. In the east wall, there is a reconstruction of the inner main gate building of the Marduk Gate (Fig. 2.37). In order to create a durable structure, it was rebuilt on the old foundation walls not with unbaked mudbrick, as originally, but with baked brick. The front gate building and the embankment with fortifications were not reconstructed. It gives a clear impression from inside the city, but owing to its missing parts it is much more difficult to understand from the outside; compare the model (Fig. 2.38). About 100 m of the northern section of the east main mudbrick city wall (Fig. 2.39) have been given a renovated inner west façade,118 several metres high, to be compared with the inner south façade of the same main mudbrick city wall in the palace area (Fig. 1.11).

In the area of the Ištar Gate, the baked brick walls of the gate itself and the walls connecting it to the mudbrick city walls have been partially reconstructed, essentially filling in holes made by brick miners, but never up to the top of the original walls (Fig. 2.30). A more complete reconstruction in baked brick up to the top of the walls has been done for the walls stretching about 180 m from the Ištar Gate in the northern direction, on both sides of the preserved Level 3 of the Processional Way (Fig. 2.40). The preserved walls here were considered by the excavators to be the foundations for an upper street Level 1, where glazed relief bricks with lions were exposed (Fig. 2.36). It has not been definitely proven archaeologically that the reconstructed walls belonged to the same level as the preserved street, but the sequence of expansion of the palace area makes it probable (Fig. 2.24 in the series Figs. 2.21–2.25), and the reconstruction as it stands gives a good idea of how it could have been arranged. A half-size copy of the Ištar Gate

116 Marzahn 1992; Pedersén 2020. The about 100 years old inscription is planned to be treated in Weiershäuser – Novotný 2023.
was constructed in 1958–1959 in Babylon and is standing at some distance from the Processional Way. This modern gate prominently placed at the end of the entrance road to the site has been a kind of national symbol where numerous official and touristic photos have been taken over the years.\footnote{Baqir 1961, 7.}
2.7 Amounts of building materials for the city walls

The quantities of the main building materials have been estimated from the digital model of Babylon by means of the ArchiCAD program used for the construction of the model. The following listing gives the volumes of the city walls from which the total number of unbaked mudbricks and baked bricks, as well as the quantities of mud mortar and bitumen mortar in the walls have been calculated. The walls surrounding the palaces (marked *) have been treated as sections of inner city walls, especially after Nebuchadnezzar’s expansion of the central palace area, but they are of course also parts of the palaces and discussed there. Figures are given for two periods: one at the end of the reign of Nabopolassar, and one at the end of the reigns of Nebuchadnezzar and of Nabonidus. The only possible new Nabonidus wall is the embankment completed during his reign, but probably started earlier. Here, the replacement of the old mudbrick walls of the Ishtar Gate and around the South Palace by baked brick constructions is accounted for. Any other rebuilding or repair would have resulted in additional material being used during Nebuchadnezzar’s time, but that has not been accounted for here. As there are hardly any certain remains of Nabopolassar’s external palace walls, the amounts given are quite uncertain. Alternative heights of the reconstructed walls and different upper parts of the same walls would require some adjustments of the calculations. It is much more difficult to estimate the amount of other building materials.

All calculations are done including everything from the base of the foundation to the top of the walls, including crenellations as far as recorded in the digital model. Large amounts of low quality and broken baked bricks were used, especially late in Nebuchadnezzar’s reign, for filling terraces. The best-known such large terrace is the one under the North Palace. As it has been totally impossible to establish how many (if any at all) of the broken bricks may originate from constructions here treated as city walls, they have been totally disregarded in the calculations. Also unaccounted for is any strengthening (*kisû*) of the walls not recorded in the digital model. See Section 1.6 for the simplification of used brick sizes.

City walls, Nabopolassar and earlier

<table>
<thead>
<tr>
<th></th>
<th>Volumes (m³)</th>
<th>Mudbricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imgur-Enlil</td>
<td>1,262,000</td>
<td>97,100,000 mudbricks</td>
</tr>
<tr>
<td>Nēmet-Enlil</td>
<td>353,000</td>
<td>27,200,000 mudbricks</td>
</tr>
<tr>
<td>*External South Palace walls</td>
<td>39,000</td>
<td>3,000,000 mudbricks</td>
</tr>
<tr>
<td>Embankments</td>
<td>229,000</td>
<td>20,800,000 baked bricks</td>
</tr>
<tr>
<td>*External South Palace foundations</td>
<td>17,000</td>
<td>1,600,000 baked bricks</td>
</tr>
<tr>
<td>Total unbaked</td>
<td>1,654,000</td>
<td>127,200,000 mudbricks</td>
</tr>
<tr>
<td>Total baked</td>
<td>246,000</td>
<td>22,400,000 baked bricks</td>
</tr>
<tr>
<td>Total without external palace walls</td>
<td>1,615,000</td>
<td>124,200,000 mudbricks</td>
</tr>
<tr>
<td>Mud mortar (10% of mudbrick wall)</td>
<td>165,000</td>
<td>20,800,000 baked bricks</td>
</tr>
<tr>
<td>Bitumen mortar (10% of brick wall)</td>
<td>25,000</td>
<td>-</td>
</tr>
</tbody>
</table>

Mud mortar (10% of mudbrick wall)
City walls, end of Nebuchadnezzar and Nabonidus

<table>
<thead>
<tr>
<th>Description</th>
<th>Volume (m³)</th>
<th>Mudbricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imgur-Enlil</td>
<td>1,258,000</td>
<td>96,800,000</td>
</tr>
<tr>
<td>Nēmet-Enlil</td>
<td>370,000</td>
<td>28,500,000</td>
</tr>
<tr>
<td>Outer city wall</td>
<td>1,063,000</td>
<td>81,800,000</td>
</tr>
<tr>
<td>North city wall, fragment</td>
<td>33,000</td>
<td>2,500,000</td>
</tr>
<tr>
<td>Embankments of Imgur-Enlil</td>
<td>648,000</td>
<td>58,900,000</td>
</tr>
<tr>
<td>River embankment, Nebuchadnezzar</td>
<td>157,000</td>
<td>14,300,000</td>
</tr>
<tr>
<td>Ištar Gate</td>
<td>63,000</td>
<td>5,700,000</td>
</tr>
<tr>
<td>River embankments, all inner city</td>
<td>442,000</td>
<td>40,200,000</td>
</tr>
<tr>
<td>River embankments, north</td>
<td>421,000</td>
<td>38,300,000</td>
</tr>
<tr>
<td>Embankments of outer city wall</td>
<td>1,295,000</td>
<td>117,700,000</td>
</tr>
<tr>
<td>*External Central Palace walls</td>
<td>1,122,000</td>
<td>102,000,000</td>
</tr>
<tr>
<td>*External Summer Palace walls</td>
<td>83,000</td>
<td>7,500,000</td>
</tr>
<tr>
<td>Total unbaked</td>
<td>2,724,000</td>
<td>209,500,000</td>
</tr>
<tr>
<td>Total baked</td>
<td>4,231,000</td>
<td>384,600,000</td>
</tr>
<tr>
<td>Total without external palace walls</td>
<td>2,724,000</td>
<td>209,500,000</td>
</tr>
<tr>
<td>Total without external palace walls</td>
<td>3,026,000</td>
<td>275,100,000</td>
</tr>
<tr>
<td>Mud mortar (10% of wall)</td>
<td>272,000</td>
<td></td>
</tr>
<tr>
<td>Bitumen mortar (10% of wall)</td>
<td>423,000</td>
<td></td>
</tr>
</tbody>
</table>

Total city walls: 594,100,000 bricks all sorts, end of Nebuchadnezzar and Nabonidus

The volume of the baked brick city walls in Babylon increased from a modest 246,000 m³ during Nabopolassar to 4,231,000 m³ during Nebuchadnezzar and Nabonidus, which is an increase of an impressive 1,600%.

The city walls, as defined here, were the largest building complex in Babylon. It must be repeated that the calculations are based only on the information in the digital model, and any adjustment of the walls in the model will result in other numbers, though probably not too divergent. Owing to our insecure knowledge of unexcavated constructions not accounted for in the model, the totals are probably too low. Also, reconstructions and renovations during the reign of Nebuchadnezzar have not been properly included here. All these points would suggest a higher number, but details are impossible to know. In Section 3.6 the total amount of bricks in the central palace area will be compared with that of the external walls around the palaces. In Section 4.3.3, the amount of bricks for the city walls will be compared with the number of bricks used for the ziggurat. The amount of bricks for the Marduk temple will be calculated in Section 4.2 and for the Ninmaḫ temple in Section 4.8, followed by a final evaluation of the amount of construction materials in Section 8.2.
3 Babylon: Palaces

Abstract
An overview of the known palaces in Babylon, chiefly the massive constructions by Nebuchadnezzar II. Attempts are made: to distinguish different building phases using data from German and Iraqi excavations combined with cuneiform and other ancient texts; to relate these to the remains now to be seen in Babylon; and to try to give reasonable interpretations, e.g., of the “Hanging Gardens”.

3.1 Introduction
During the reign of Nebuchadnezzar II (604–562 BC), there were tremendous changes to and expansion of the palace area in Babylon. The ruins are now visible in what is called the Kasr (قصر “palace”) area. The German excavations of 1899–1917 and later Iraqi excavations, with reconstructions, especially around 1980, have exposed Nebuchadnezzar’s large building complexes with quite different construction levels; these projects were enabled by the king’s huge resources, at the centre of a large empire. The different parts of the palace complexes will be discussed here, with attempts to distinguish between different levels exposed by the two excavation groups. The remains, especially in the South Palace (often with added modern reconstructions above), will be identified from the different excavations. This is a first attempt to bring all available archaeological and written sources together and to use them to create a reconstruction in a digital model. This model can test the feasibility of specific measurements of the construction. Others will, it is hoped, produce more detailed work in the future.

As a background for the somewhat more detailed critical and interpretative discussion that follows, it is necessary to look first at the main steps of the development of the palace area in Babylon during Nebuchadnezzar’s time (Figs. 3.1–3.4, 6.2). This is partly based on a previous study.1 Compare also the treatments in Chapters 2 and 5.

Although a royal palace, probably in Babylon, is referred to in Old Babylonian year formulas for Samsuiluna year 34 (1721 BC) and Ammiditana year 20 (1664 BC), there is no archaeological evidence until about a millennium later, owing to the high modern groundwater level. Nebuchadnezzar said he removed the old palace of his father

---

1 Pedersén 2018a, with a more detailed discussion of the gate in the middle of the palace area.
Nabopolassar (625–605 BC) (Figs. 2.21, 2.22), which was built in unbaked mudbrick (libittu), and rebuilt it with baked brick (agurru). Whether or not any traces of the previous construction can be identified will be discussed below. In the first overview here, we limit ourselves to the main steps of the impressive constructions during the reign of Nebuchadnezzar. The layout of the city, with the river flowing through the middle from north to south, was the same as before, with a double city wall of unbaked mudbrick and an embankment of baked brick that was further strengthened by Nebuchadnezzar (in the

2 Weiershäuser – Novotny 2022, Nebuchadnezzar II 2.


3.1 Introduction

palace area, even doubled). The early Nebuchadnezzar floor level of the palace (Fig. 3.1) was several metres lower than in the following phases of construction.

The next step in the development of the palace area was the enlargement of the area with the so-called West Fortification into the river, and the construction of the first part of the North Palace in the moat. Possibly this was combined with a raising of the floor levels in the South Palace, as well as the raising of the level of the Processional Way (Fig. 3.2).
The following step included a further extension of the North Palace in a northerly direction, including what had been the moat of the previous step. On the east side of the Processional Way, a walled construction, the East Fortification, was added with external walls corresponding to the walls of the North Palace. The South Palace may also now have been given a higher floor level. This is the level that is now reconstructed in Babylon along the side of the Processional Way north of the Ištar Gate (Fig. 3.3).

The last enlargement of the palace area during Nebuchadnezzar’s reign included, once again, the incorporation of the moat of the previous step into the palace area. The North Palace, and perhaps also a new upper level of the west section of the South Palace, was completed on a higher level. The newly added area, an extension of the North Palace, is the so-called North Fortification. A similar addition was also made to the East Fortification (Fig. 3.4).

The palaces continued to be used and rebuilt during the Achaemenid and Hellenistic periods, as discussed below. One late example of their use, according to the Astronomical Diary, was during 188 BC, when the Seleucid king Antiochus III (222–187 BC) stayed in the palace.3

The elevations given in the following are based on the German zero elevation on the embankment of the now covered canal inside the North Palace, next to the modern placement of the well-known stone lion as shown below (Fig. 3.28). The German elevation ±0.0 m equals 25.5 m above sea level, according to modern nearby benchmarks of the municipality of Hillah.

3.2 South Palace
The South Palace (UTM 445660E 3600690N) was the traditional main palace (ekallu). It was called the South Palace (German: Südburg) by the German archaeologists to distinguish it from the palatial buildings to the north of it. The archaeologically attested palace consists of almost 600 rooms arranged around 5 large and 50 small courtyards. It was completely rebuilt by Nebuchadnezzar. The modern concrete floor at +7.4 m, which is now to be seen in most of the reconstructed palace, is slightly below the middle of the (at least) three main levels documented in the elevation span from +2 m to +13 m. In the Achaemenid period, administrative business texts mention the large palace (ekallu rabû) and the new palace (ekallu eššu), which would fit our understanding of the South Palace and the North Palace quite well. However, pending any proof that this was the usage during Nebuchadnezzar’s time, such a nomenclature has not been used here.4

German excavations were conducted in the South Palace during several periods: 1900–1901, 1903–1907, and 1912–1913. Only limited work took place between these periods. Around 1980, Iraqi teams re-excavated the whole palace and made step by

Fig. 3.5. South Palace, final Nebuchadnezzar level +12 m, showing the south walls of the five large courtyards with door openings to the principal rooms of the palace. From left: East Courtyard, with small doors (1.5 m) and perhaps two floors; Middle Courtyard, with a high, 4.0 m-wide door; Main Courtyard, with three doors, respectively 3.8 m, 5.8 m, and 3.8 m wide, in a wall decorated with glazed bricks; West Courtyard, with a 4.7 m-wide door; Annex Courtyard with a 10.7 m-wide recessed door. Model: Pedersén.

step reconstructions of most of the walls on their still standing lower wall sections and foundations.5

The South Palace consists of outer fortification walls about 300 m west–east. The sides running north–south, 126 m long on the western side and 190 m on the eastern, have been discussed in Chapter 2. The total area of the palace is 45,000 m$^2$ or 4.5 ha (Figs. 3.6, 6.2). This palace has a far longer history and a much more diversified construction than the North Palace. Owing to the high modern groundwater level, almost all archaeological evidence about it comes from the Neo-Babylonian and later periods, with the exception of limited nearby evidence from the Neo-Assyrian period. The palace was not placed on a terrace, as was the North Palace, but consisted of walls strengthened with different constructions, often of kisû type, in various rebuildings (Fig. 3.5).

There are a few main construction levels, which must have required a more or less complete demolition and rebuilding of walls. These are at about +2 m, +8 m to +10 m, and +12 m.6 Between and above these main levels, there is some evidence of relayings of floors and other modifications. Later compression of earth and walls gives a modified and even more complex picture. The modern reconstructed floor level, in central parts with a floor of concrete, is (as noted above) at about +7.4 m, just below the middle main level. Some limited sections have a lower modern floor, especially the inner southern west–east street next to the south external wall at about +3.5 m.

6 See Margueron 2013, fig. 12, for a partly similar interpretation.
The palace was laid out with five large courtyards running in a line from east to west. The most important one, the Main Courtyard with the throne room, is in the middle. Most of the rest of the palace rooms were grouped around 50 smaller courtyards. Quite often, such a unit grouped around a courtyard could be reached by means of a street coming from one of the five large courtyards. According to the German excavators, underground basements were attested only in the vaulted chambers in the northeast corner of the palace. Attested (or, for good reasons, assumed) staircases would allow for upper floors or give easy access to the roof (Fig. 3.6).7

No plaster has been attested on the external walls, and they are here treated as

7 Koldewey 1931, 71, 98; a few more possible staircases have been added here consisting of narrow corridors open on only one short side. Koldewey considered upper storeys possible but not proven, owing to too few certain remains of staircases.
structures of visible yellow-brown bricks. The only attested decoration on these walls are the glazed bricks, to be discussed below (Figs. 3.15, 3.17, 3.21). The inner walls of the rooms had a white lime-gypsum plaster, which has been preserved only under the uppermost floor level in the first entrance gate room of the palace in the east (Fig. 3.11). Whether asphalt in the throne room may likewise indicate a black wall – as has been attested in several of the temples (see Chapter 4) – or whether it was intended as some kind of water protection will be discussed below (Fig. 3.18). A massive 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 areas for administration and reception and the west as sections for the king and the queen. Owing to lack of evidence, it is not so easy to follow his idea that the west part was the old palace: essentially the West Courtyard and all rooms around it, with the exception of the Annex Courtyard, which is a later rebuilding and extension. The new palace, for Koldewey, comprised the east parts of the South Palace, and the areas around the East, Middle and Main courtyards. Originally the old palace also included the eastern part of what was included in the Annex, but the size of it is not known because it was cut away when the Annex was constructed (Fig. 3.6). Here, instead we take the lowest attested level of the whole palace area, but excluding the Annex, as the older palace.

In the following, there will first be a discussion of the oldest attested level at +2 m of the whole palace, dated either to Nabopolassar or early in the reign of Nebuchadnezzar. Then the two main upper rebuilding projects by Nebuchadnezzar, as well as later activities, will be treated area by area, from east to west. Comparison will be made to the modern reconstructions from around the 1980s that stand on the remains of the ancient walls.

### 3.2.1 The older South Palace

Most evidence for the older construction level is from the outer walls of the palace, because those were the areas where the German excavations went deeper; that was the case for only a few places inside the palace (Fig. 3.6). The 1980s reconstructions, with rebuilding on top of the ruined walls, have made any new examination of the oldest walls and levels rather difficult in most places.

The so-called old construction level is characterised by the use of small bricks, 31 × 31 cm to 32 × 32 cm in size, without any inscription or stamp. As mentioned in Section 1.6, a few bricks of such dimensions have been found in the embankment with Nabopolassar inscriptions, but that does not date all use of such bricks; they probably continued to be used during the beginning of the reign of Nebuchadnezzar. The last-mentioned king will here be treated as the probable builder of the older preserved palace, because in this way it is easier to get agreement with inscriptional evidence. However, there is no definitive proof.

---

8 Koldewey 1931, 34, Bab 43114.
9 Koldewey 1931, 83.
The walls around the palace have deep foundations, here assumed to be at an average of about −3 m, but these are almost never archaeologically attested because of the high groundwater level; exceptionally high is the northeast corner, founded at +0.4 m. The upper part of the foundation was documented by the German archaeologists on the east wall near the southeast corner of the palace, where the foundation is 5.4 m thick, but above +1 m, the wall is the normal 4.0 m in thickness. For a length of some 30 m, there is up to +8.3 m an old wall with small bricks. The lowest level, about +2 m, probably had the inner palace walls just standing on some limited foundation at about +1 m, if any at all was required (Figs. 3.7, 3.13).\footnote{Koldewey 1931, pls. 6, 29.}

Remains of the old construction with small bricks are preserved and can still be seen

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig37.jpg}
\caption{Fig. 3.7. South Palace. Façade and section. Small southeast entrance (UTM 445815E 360645N). Arched door at ca. +2.0 m (red). Upper arched door at +9.4 m (green), corresponding to the exposed level of the Processional Way. The yellow area of wall is old; the rest is made of standard Nebuchadnezzar bricks. W. Andrae in Koldewey 1931, pl. 29.}
\end{figure}
at the eastern outer wall of the palace (Fig. 3.6, coordinates Kasr 26–27w), bordering the Processional Way up to a height of +8.3 m at the small southeast arched door, German “Bogentor” (Fig. 3.7). Door openings and the wall construction suggest a floor at +2 m, but within the limited area excavated inside the palace, remains of a floor have not been attested. Such remains may well have been removed and the bricks reused. With the exception of the southernmost wall section and the recessed area at the main entrance, all original bricks in the southern 30 m- and northern 70 m-long stretches of the eastern outer wall belong to the old construction. When the next, higher level of the palace was constructed, all these walls were used as foundations and, therefore, lay beneath the new levels, both inside the palace and outside in the street. Their underground location has resulted in their rather good preservation, in parts.

The northern outer palace wall (Fig. 3.6 Kasr 21m–22i), now covered, had an 80 m-long section of similar small baked bricks with a zigzag façade, of which the bottom has not been excavated, but with the western section standing on a foundation at +0.6 m, later raised by a covering of the zigzag wall to +2 m. Such foundation surfaces under zigzag walls normally approximately coincide with floor and street levels, as seen in Neo-Babylonian private houses in the Merkes area in Babylon (compare Chapter 6). The top of the preserved old wall would have been under the wall with larger, Nebuchadnezzar stamped bricks. In South Palace House 38, this is about +7.5 m, which may approximately also be applicable for the north outer wall of the palace (Fig. 3.8). In the following period with more archaeological evidence, a heavy kisū was constructed in front of the zigzag wall when the terrain was raised, leading to the preservation of the old wall.

The west part of the south outer wall may possibly be another example, but its

---

11 Koldewey 1931, 3–13, pls. 4, 5, 9.
12 Koldewey 1931, 101–102, pl. 30.
13 Reuther 1926, passim.
14 Koldewey 1931, 100, pl. 17–18.
interpretation is not clear. It had in the southwest, 10 m east of the west corner, the first tower with a door (Kasr 28–29h). From +1.4 m downwards, it consisted of old, small bricks; from that height up to +4.0 m there was a mixture of old and new bricks; and above that height, the larger bricks with Nebuchadnezzar inscriptions were used.15

Inside these early external palace walls, foundations of walls have (owing to limited excavation) been attested only in a few places. As will be seen in Section 3.2.5, in the south area of the West Courtyard there are remains of old walls with small bricks up to +8 m. Most other examples point in the opposite direction, with standard Nebuchadnezzar bricks. The main north–south wall, west of the Main Courtyard, separating the western and eastern parts of the palace is founded at ±0.0 m. The other walls of the palace itself inside the surrounding walls have, at least in the east, a foundation at about +0.7 m. This is attested in the southeast in the rooms inside the arched gate (Fig. 3.7). The same depth of foundations was reported in the northeast at the vaulted chambers. However, these inner walls are all constructed with normal stamped Nebuchadnezzar bricks, like all upper levels.16

The upper levels – resulting from raising the walls and filling in between them in order to create floors several metres higher – had to use different ways of strengthening the construction. Most common, and even today possible to see in the ruins, was the kisû,

15 Koldewey 1931, 19–21, pl. 33.
16 Koldewey 1931, pls. 6, 29.
a several-metre-wide baked brick wall, built under the new floor level next to an older wall, in order to strengthen it. Such a *kisû* can be seen inside the eastern outer wall of the palace (*Figs. 3.7, 3.9*), and outside its southern outer wall. It was also constructed outside the northern zigzag outer wall, but here it was later probably covered by other walls and is now hidden by the modern reconstruction. Another way of strengthening walls under the floor is the 11 m-wide packing of baked brick fragments in asphalt inside the zigzag outer wall. This packing contained mudbricks deeper inside.  

3.2.2 South Palace: Entrance and East Courtyard area
The middle main level of Nebuchadnezzar’s palace was at about +9 m to +10 m in the east and about +8 m in the west. Most of what can be seen now in the reconstructed palace in Babylon shows a modern level at one or two metres under that level. There was also at least one higher level at about +12 m, with reworking up to +13 m remaining after the brick miners’ activities. Any possible even higher main floor level, if it ever existed, has been completely taken away by brick miners. All these floor levels above the modern

---

17 Koldewey 1931, 99, pls. 17, 18.
floor level +7.4 m were taken away during the Iraqi reconstructions in the 1980s in order to create a one-level site that could be easily understood (Fig. 3.6).

The main entrance building to the South Palace was completely rebuilt by Nebuchadnezzar with normal-sized, 33 × 33 cm, stamped bricks. German excavations only exposed a floor level at +12.7 m, with the foundation thereupon for another higher floor level. This does not correspond to the now exposed level of the Processional Way outside, but to a higher, no longer preserved, street level. In connection with the reconstruction of the palace around 1980, Iraqi scholars excavated at least 8 m deeper, strengthened the wall remains, and partly refilled in order to place a modern concrete floor with its top at +7.4 m inside the gate (Fig. 3.10). As will be seen below, there are traces of a level in the wall construction at +9.1 m on the inside of the gate.

Along the outer wall of the palace, some 50 m to the south of the main entrance, German archaeologists also unearthed the smaller vaulted door opening already discussed above for the lower +2 m level with smaller bricks. Above +8.3 m, the wall was built with normal stamped Nebuchadnezzar bricks. From +9.4 m upwards a new door was constructed; the old one was closed with mudbrick and the Processional Way outside was raised to roughly the same level as the new gate, +9.4 m. This is the street level that is now exposed. Higher levels were not preserved in this area of the palace (Fig. 3.7).

The East Courtyard, with a size of 31–40 × 61 m or 2,100 m², is the second largest of the palace courtyards. Here, Koldewey excavated floor levels between +12.0 m and +13.3 m, each floor consisting of several layers of bricks of 33 × 33 cm, covered by a
layer of large bricks 50 × 50 cm. This corresponds to a wall adjustment at +12.5 m in the west main entrance gate. Iraqi excavations around 1980 found another wall adjustment in the same gate at +9.1 m, possibly connected with another floor. The Iraqi excavations continued downwards, following the wall remains and, after conservation treatment of the walls, the area was refilled. On the top of the fill the modern concrete pavement with the surface at +7.4 m was constructed (Figs. 3.11, 3.12). The same procedure was followed for all the following parts of the palace.

In the northeast corner of the South Palace, Koldewey excavated some underground vaulted chambers in a kind of half-basement created by not filling in a 1,600 m² area when all other parts of the palace were rebuilt with raised floor levels (Figs. 3.6, 3.13). Excluding walls and corridors, etc., this would give an effective storage area of around 500–600 m² per floor in this area. The walls inside the vaulted chambers were founded at about the same level, +0.8 m, as all other walls in the east of the palace. No floor was preserved, but the change in the earth levelling and the bottom of a staircase were taken as indication of an original floor level at +4.6 m. Three north–south and two west–east corridors were surrounded by vaulted chambers. The excavators considered that there were three storeys, the lowest accessible from the staircase in the south, the second from doors in the south and the northeast, and the third from doors beside the ones to the second floor.

In the core of the building, on the second and third floors, Koldewey wanted to place the “Hanging Gardens”, an opinion that has been questioned by many. His location of the gardens here was said to be based on Greek authors, but on basic points, such as
description and size, this was obviously not appropriate (for the gardens, see Section 3.3.3). There were Iraqi reconstructions of the central walls of the vaulted chambers in the 1960s followed by the rest of the walls and the vaults around 1980. The lowest floor, at about the original level, was used for that reconstruction (Fig. 3.13). The German excavations unearthed a number of fragmentary limestone blocks in this area. As the maximum size of the stones, 105 × 105 cm, is the same as for the limestone paving on the nearby Processional Way, this may well have been their original placement (see Section 5.8).

In the room with the staircase leading down to the vaulted chambers, the remains of an administrative archive with some 300 clay tablets were found during the German excavations on the floor level (Fig. 3.6). The cuneiform tablets dated to Nebuchadnezzar years 10–34, or 595–577 BC, and were administrative documents dealing with large amounts of barley, dates, sesame and sesame oil handled by various palace officials. There are registrations of deliveries, storage and use. The very large amounts are stored in different storage facilities or silos (karmu) located beside the palace, beside the canal, at the street of the Nabû temple, and next to the house of the zazakku official. Many of the incoming commodities arrived by boat. The large amount of barley which arrived in several deliveries, each around 10,000 kur = ca. 1,800 m³, cannot have been stored in the vaulted chambers: they are far too small. Some of the recipients of the commodities are listed; these include other professionals, foreigners and prisoners. Especially for the sesame oil, there are long, detailed lists of recipients including prominent women, palace officials and musicians, foreign royals including the imprisoned biblical king Jehoiachin, and foreign emissaries from many states at the periphery of the empire. For the storage, compare the discussions in Sections 3.2.7, 3.6.\[19\]

---

18 Koldewey 1931, 38–64; Alwan 1979; Alwan 1985. Koldewey 1931, 44, considered the stones to be part of the sub-construction under the “Hanging Gardens”.

19 Pedersén 2005, 111–127 N1. The first reference to the content of some of the texts was Weidner 1939.
3.2.3 South Palace: Middle Courtyard area

In the gate building between the East Courtyard and the Middle Courtyard, as well as in the Middle Courtyard itself, German excavations documented floor remains at +12.0 m to +13.0 m. The Middle Courtyard was somewhat smaller than the East Courtyard, 36 × 37 m or 1,350 m² (Fig. 3.6). On the south side was the 240 m² principal room. The Iraqi excavations in around 1980 here and in the subsequent areas in the palace followed the same plan as in the main entrance gate. Excavation was performed to a lower level and, after conservation of the wall remains, the area was backfilled and fitted with a concrete floor with the top at +7.4 m. Here also, the wall remains display a change of construction, this time at +9.5 m. There was probably a floor here, so far undocumented (Fig. 3.14).²⁰

On the uppermost level, about +12 m, Koldewey reported remains of towers decorated with blue-glazed bricks and glazed lion reliefs beside the doors from the East to the Middle Courtyard and from the Middle to the Main Courtyard (Fig. 3.15).²¹

3.2.4 South Palace: Main Courtyard area

The Main Courtyard in the centre of the South Palace was the largest of all the palace courtyards, measuring 55 × 61 m, or 3,350 m² (Fig. 3.6). On the south side were three large doors to the throne room. The largest door opening in the middle was 5.8 m wide,

²⁰ Koldewey 1931, 67–68.
²¹ Koldewey 1931, 67, 71.
and those on either side were each 3.8 m wide. The middle door looks as if it had been intended to be 10.3 m wide, but during the original construction was reduced to 5.8 m. (The larger width would have been almost the same as the wide door south of the Annex Courtyard, discussed below.) An alternative explanation might be that the width was reduced to offer some structural relief to the massive wall construction. The German archaeologists excavated only a series of the uppermost pavements between $+10$ m to $+12$ m, with a further possible very badly preserved one at $+12.5$ m. The Iraqi reconstructions, in the 1980s, followed the further excavation and levelling to the presently exposed level at $+7.4$ m with modern concrete flooring (Fig. 3.16). The corridor along the west wall of the Main Courtyard, with the two ramps leading down to it from the courtyard, was on a lower level, at least for a period: the same as the western part of the palace before its last higher floor, as discussed below.\footnote{Koldewey 1931, 75–79.}

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.\footnote{Koldewey 1931, 84–91; Pedersén 2020.} The entire 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. About 7 m in front of the west door to the throne room, a large section of the façade (approximately 1 m$^2$) had fallen down with the decoration downwards. This, together with other fragments, served as a starting point for the reconstruction in Vorderasiatisches Museum in Berlin, where all the middle and upper parts of the reconstructions are modern replicas and only the bottom lion frieze consists of original

\textit{Fig. 3.15. East, Middle and Main Courtyards, looking southwest. Main doors are flanked by towers decorated with glazed bricks and lion reliefs. Floor at $+12$ m. Model: Pedersén.}
fragments. This reconstruction has here been expanded in the digital model so it fills most of the 53 m-wide wall in front of the throne room (Fig. 3.17).

The throne room was the largest room in the palace, measuring 51.9 × 17.5 m or some 900 m². The German excavation went only as far as the top of the remains of the walls and reported only a few floor remains at +11 m. The excavation down to a little under the now reconstructed floor at +7.4 m was done by Iraqi excavators around 1980. A changed wall construction at +10.0 m in the main door indicates a major rebuilding of the wall and a new floor. Above this level, there are also remains of asphalt on all preserved parts of the north wall of the throne room. This may indicate that the north wall containing the three door openings toward the courtyard was completely black, a decoration similar to what has been established for several of the temples (cf. Chapter 4). An alternative interpretation may see it as connected with a higher floor, perhaps as some kind of water protection (Figs. 3.18, 3.19).²⁴

²⁴ Koldewey 1931, 82–83, pl. 15. According to Wahbi Abdul-Razzak, structures of unbaked mudbrick were unearthed in the centre of the throne room about 2 m under the modern floor during the Iraqi excavations there. As they were never studied, it is not clear if they are remains of Nabopolassar’s mudbrick palace or just a strengthening of the substructure as elsewhere in the western part of the palace.
The very great width of the room, 17.5 m, which is larger than in Assyrian palaces, and the very massive north and south long walls, each 6 m in thickness, with narrow side walls only 2.8 m thick, raised questions about the construction of the roof during the German excavations. Of the two possible alternatives, cedar balks or a vaulted brick construction, Koldewey opted for a vaulted brick construction. Later, E. Heinrich instead presented arguments for wooden balks. A calculation done by S. Polóny, at Heinrich’s request, has shown that wooden balks of 35 × 75 cm spaced 60 cm apart would be sufficient; these would require supporting brick walls of at least 4.55 m in thickness, according to modern German technical standards. This seems technically consistent with the archaeological remains, and cedar logs from Lebanon for use in the roof of palaces is a common theme in royal inscriptions of the period (see Section 3.2.7). Polóny’s calculations of the brick vault alternative, on the other hand, show problems indicating that the construction might not have worked properly with the available construction materials.²⁵

3.2.5 South Palace: West Courtyard area
A massive wall, 3.5 m thick, with its foundation at ±0.0 m, separated the western from

---

Fig. 3.18. The 17.5 m-wide throne room, looking northwest, cf. Fig. 3.19. Modern provisional floor at +6.9 m. First step of reconstruction with remains of old walls joined by modern masonry. Top of remains with asphalt plaster (red). Changed wall in door (yellow) at +10.0 m. Photo: K. Schippmann around 1980, excerpt (© Stefan M. Maul, Universität Heidelberg, Seminar für Sprachen und Kulturen des Vorderen Orients).

Fig. 3.19. The 17.5 m-wide throne room, looking northwest, cf. Fig. 3.18. Modern floor at +7.4 m. Changed wall construction in door +10.0 m indicates a floor (yellow). Asphalt traces (red). Reconstruction completed to the assumed top of the wall, probably too low, roof missing. Photo: Pedersén, October 2018.
the eastern part of the palace. The western part consists of two courtyards, the West Courtyard and the Annex Courtyard, with the rooms and smaller courtyards around them (Fig. 3.6). During the excavation, Koldewey called this the palace of Nabopolassar, which is a possibility, but not a certainty. The upper parts were excavated by the German mission, and the lower parts were exposed in connection with the Iraqi reconstructions around 1980. During at least part of Nebuchadnezzar’s reign, the floor of the western part was lower than in the east. There were two ramps going down to the 5 m-wide street at this lower level in the west section of the Main Courtyard, with direct doors to the West Courtyard and its rooms. However, the wall between the higher level in the Main Courtyard and the street looks provisional, being made of mudbrick, so it may have been short-term. The street was later filled in with sandy clay and the now missing floor at +12 m probably continued over the west part of the palace.\(^{26}\)

The West Courtyard, some 31 × 33 m or 1,000 m\(^2\) in size, had remains of a floor at about +8.1 m, with uninscribed bricks of 31 × 31 cm to 32 × 32 cm. Old walls made from the unstamped smaller bricks often extended up to this floor level, or sometimes even higher. There are traces of an overlaying fill for a higher, not preserved, floor. Koldewey assumed that this, or one above it, would have been at +12 m, giving the same final main floor level throughout the whole South Palace.\(^{27}\)

The West Courtyard had a single 4.7 m-wide door opening to the principal room in the south. The principal room was the second-largest chamber in the palace; measuring 34 × 12 m or some 400 m\(^2\), it is about half the size of the main throne room. Under the +8.1 m level, old walls have their upper parts cut off, and downwards cutting also occurred in order to make way for the partly new structure of the principal room (Fig. 3.6). These old walls, with the smaller brick size, may be from early in the reign of Nebuchadnezzar. Owing to lack of excavation, it is impossible to say if there was a corresponding floor at +2 m or not (cf. Section 3.2.1). The Iraqi reconstruction used the walls on the upper level (Fig. 3.20).\(^{28}\)

3.2.6 South Palace: Annex Courtyard area
The Annex Courtyard, measuring some 31 × 35 m, about 1,000 m\(^2\), had an upper rather rudimentary preserved floor at about +8.0 m, the same as in surrounding rooms (Fig. 3.6). Only remains of the rooms and walls around it were excavated by Koldewey; the courtyard itself was an Iraqi excavation, done in connection with the reconstructions around 1980.\(^{29}\)

There is an extremely wide (10.7 m) recessed door opening to the principal room in the south (about 200 m\(^2\), 8.7 m wide), beyond which was another room of 170 m\(^2\), 8.6 m wide. Koldewey treated this wide door opening (and the other wide openings

---

\(^{26}\) Koldewey 1931, 81, pl. 14.
\(^{27}\) Koldewey 1931, 103.
\(^{28}\) Koldewey 1931, 107–114.
\(^{29}\) Koldewey 1931, 117–119, pl. 20.
in the two principal rooms in the North Palace, along with those of the two principal rooms in the Summer Palace), as something that inspired the later Achaemenid palace in Susa. Later on, Gasche took the opposite view and treated the Babylonian doors and courtyards as Achaemenid rebuilding. There have indeed been Achaemenid finds, for example in the Annex in the South Palace, where most of the quartz bricks normally dated to Achaemenid times were unearthed. However, no underground traces of older, narrower door openings have been found at the locations of the wide doors, something that weakens the argument for re-dating. In the Annex, a lot of normal glazed bricks with lion reliefs have also been excavated. These are tentatively shown in the model on the wall before the principal room, even though most were found as fragments inside the rooms (Fig. 3.21).30

The Annex was a later addition to the South Palace by Nebuchadnezzar. The embankments beside the river in this area were rebuilt, step by step, farther and farther to the west during his reign. Then the western part of the palace was demolished and the Annex built with foundations partly different from those of the rest of the palace. Wide foundations with bricks in asphalt were constructed up to about +2 m under main walls,

with infilling of broken bricks and asphalt between them. The lower parts are constructed with reddish bricks and asphalt mortar, and the upper parts with yellow bricks and lime-gypsum mortar; almost all are Nebuchadnezzar bricks. Only one brick is said to be from Neriglissar, but a cylinder inscription records Neriglissar’s rebuilding of the southwest of the South Palace.31

Outside the west wall of the South Palace, there was probably a garden, as the excavators suggested, and then a canal followed by the West Fortification (see Section 3.4). In the garden, a small building was constructed in the Achaemenid period at +12 m. A nice reddish pavement has been unearthed, but the glazed quartz brick reliefs said in the German publications to have decorated the building are questionable, as most of these bricks were not found there but inside the Annex building of the South Palace.32 The few remains still standing were levelled in the 1980s to about +8 m, but remains of an unexcavated building of the upper level still stand to the south of the Achaemenid building.

3.2.7 South Palace: Discussion

Cuneiform inscriptions give some detail about different aspects of the South Palace, including the now missing parts of the building. The palace of mudbrick (libittu) that Nabopolassar built had structural problems, due to water floods and the raised levels.31 Koldewey 1931, 114–119, pls. 23–25, 32; Weiershäuser – Novotny 2020, Neriglissar 3, 4.

32 Koldewey 1931, 120–124, pls. 26–28; Pedersén 2020.
Processional Way, which had made the doors too low. This earlier palace was taken away by Nebuchadnezzar. He built a massive wall of asphalt and baked bricks (agurru) that surrounded the rebuilt palace. The foundation was erected as far down as the groundwater. For the roof, mighty cedars (erēnu) from Lebanon were used. The doors were made of cedar, with plating (taḫluptu) of bronze, with thresholds (askuppu) and door poles (nukuššu) of copper.33

Nebuchadnezzar’s inscriptions could quite easily be reconciled with the archaeological evidence, if, as has been done here, the baked brick wall of level +2.0 m is dated early in the reign of Nebuchadnezzar. This would agree with evidence from the Processional Way and the Ištar Gate (see Sections 2.4, 5.6, 5.7, 5.8). Koldewey, as has been noted, instead took the walls from +2 m to +8.0 m as Nabopolassar’s foundation for his unbaked mudbrick wall, which was replaced by Nebuchadnezzar’s baked brick wall. However, with this interpretation we run into problems with the levels of the street and the gate.

Combining the information from the inscriptions with the excavated details gives a mighty picture (Figs. 3.5, 3.6) of the South Palace, with its five large courtyards with principal rooms to the south in four of them. It was surpassed in materials and design only by the North Palace, constructed later in Nebuchadnezzar’s reign (see below). Exceptionally, the South Palace was not only called palace (ekallu) but also abode (kummu), a term normally reserved for the upper building on the ziggurat and for the North Palace. In addition to serving as the royal residence, the South Palace is sometimes described as having another purpose: to store silver, gold and all types of precious stones in huge quantity.34

Nebuchadnezzar’s clay prism, found at the southwest corner of the South Palace, reports beside the so-called “Hofkalender” that all the countries and areas of the empire had to make contributions to the construction of the South Palace. The prism also records that in the seventh year of Nebuchadnezzar, 2,000,000 barley, 100,000 dates and 70,000 (?) sappatu-jars of wine were stored inside the palace and somewhat fewer in the Esagil. The units of measurement of barley and dates are not given, but if they are measured in normal kur (= ca. 180 litres) we have 360,000 m³ of barley and 18,000 m³ of dates. If we can use the Neo-Assyrian sappatu (= 5 litres) we get 350,000 litres or 350 m³ of wine. Of these large quantities, only the wine could possibly have been stored inside the South Palace in the vaulted chambers, with their effective storage area of about 600 m² per floor. The barley and the dates must have been stored elsewhere (see Section 3.6). Several individual items in the range of 10,000 kur (= ca. 1,800 m³), in large-scale storage, have already been discussed in Section 3.2.2 in connection with the cuneiform archive excavated in the vaulted chambers in the South Palace. The prism also

33 Langdon 1912, 94–95 Nebukadnezar 9, 114–119 Nebukadnezar 14, 136–137 Nebukadnezar 15, 198–199 Nebukadnezar 31, 200–201 Nebukadnezar 37; Da Riva 2012, 61–62; Da Riva 2013b, 210–211; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 18, 19, 23.
mentions contributions from all over the empire for the palace’s construction. This can be compared with the contribution from the Inanna temple in Uruk for the construction work of the North Palace in Babylon, found in some economic documents (see Section 3.3.3).35

The palace continued to be used for some centuries. For the Achaemenid period, we have discussed the quartz bricks and possibly the wide doors above. The Hellenistic period has left sealed clay bullae, often fastened to now missing parchments, and a number of items of Greek Hellenistic black pottery and Greek terracotta. In the Parthian period, the palace seems to have lost its original function and a large number of graves were erected in the Main Courtyard.36

3.3 North Palace
The North Palace (UTM 445590E 3600900N) was a new construction of Nebuchadnezzar, undertaken after he had completed a major rebuilding of the South Palace. It was located north of the South Palace, just north of the old city walls, partly in what was previously the moat. During the reign of Nebuchadnezzar, the North Palace was expanded step by step in a northerly direction. At the beginning of the German excavations, the south and middle part of the area was called Hauptburg (Main Castle), whereas the north part – considered to be a separate entity – was called Nordburg (North Castle). Even if the excavation was far less complete than for the South Palace, the excavators considered this division to be incorrect, and the whole area was then called Hauptburg with the northern part identified as the North Fortification.37 Here, it is treated as the North Palace, in opposition to the South Palace, which was the traditional main palace, as seen above (Fig. 6.2).

In longer contemporary royal inscriptions, the North Palace was regularly called abode or chapel, kummu, the same word used for the top building of the ziggurat, whereas the palace, ekallu, was what we call the South Palace. The North Palace figures as palace, ekallu, in short inscriptions on walls and pavement stones (see below) and in contemporary archival texts.38 In the Achaemenid period, administrative business texts mention the large palace (ekallu rabû) and the new palace (ekallu eššu), something that would fit our appreciation of the South Palace and the North Palace quite well. However, pending any proof that this was the usage during Nebuchadnezzar’s time, this nomenclature is not used here.39

35 Da Riva 2013b, 210–211; Weiershäuser – Novotny 2022, Nebuchadnezzar II 11.
38 Beaulieu 2005, 48, 68.
Despite the fact that the German excavations started next to and inside the North Palace in 1899–1900, with more intensive excavations in 1913–1914, the palace was less extensively excavated and understood than the South Palace (Fig. 3.22). A reason for this may be the complicated terraced structure. Additional excavations were carried out by Iraqi teams, and in 1958 and the early 1980s, they reconstructed step by step the eastern external wall of the North Palace complex along the Processional Way (Figs. 5.32–5.34). The external protective walls of the palace can also be treated as an extension of the city walls (see Chapter 2).

---

Koldewey 1932, 1–39, pls. 2–8.
3.3.1 North Palace: The terraces

The North Palace was built in stages; every new version expanded the site northward, as an extension of the South Palace (Fig. 3.1). The first step, which probably included the West Fortification (Section 3.4), may never have been finished according to the excavators, but the lower remains of a massive outer wall are preserved under the terrace of the next step (Fig. 3.26). The additional area included was not much more than approximately that of the previous moat, which itself was now moved to the north (Fig. 3.2). The following step resulted in a doubling of the palace area, essentially by means of incorporating the area of the moat of the former step and the construction of the terrace covering the previous north wall (Fig. 3.3). The final step of Nebuchadnezzar’s building at the North Palace added more space to the north outside the main terrace, in what may have been the moat of the previous step (Fig. 3.4).41

The whole North Palace complex covered about 73,000 m² or 7.3 ha, with the length of the sides up to about 300 m (Fig. 6.2). It had a terrace covering most or all of the southern part, about 200 × 300 m, but owing to lack of excavation the exact borders have not been fully established. On this terrace stood the main building, covering about 17,000 m² or

41 Pedersén 2018a, figs. 6–8.
1.7 ha, some 134 × 130 m. This only partially preserved and partially excavated building consisted of two main courtyards with suites for representation on the south side of each. North of the main terrace was a canal flowing in a 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 embankment of the canal had an elevation of ±0 m with an assumed water level in the canal of about −3 m, we are dealing with steep changes in elevation within a limited area some 22 m wide.\footnote{Koldewey 1932, 1–24, pls. 1–8.} It is here assumed that the foundations of the outer walls, called embankments (kāru) in contemporary inscriptions and placed in the former moat,
had a base elevation of ca. –5 m, like such walls elsewhere in Babylon.

The basic building material for the walls was baked brick of good quality, 33 × 33 cm in size, with Nebuchadnezzar stamps. Asphalt mortar was used in the lower, water-sensitive parts, but otherwise lime-gypsum mortar. In the latest version of Nebuchadnezzar’s palace, the northern outer wall of the palace complex had a façade of huge limestone blocks in the lower parts, but inside and above the stones, there were the usual Nebuchadnezzar baked brick walls, which were more or less completely removed by later brick miners (Fig. 3.23).

A period of low groundwater in 1911 made it possible for the German excavators to reach the eastern section of the lower part of the northern outer palace wall, with the large limestone blocks (the blocks are ca. 2 × 2 m and ca. 75 cm high) (Fig. 1.7). The top of the stone wall is at about +0.5 m, today some 2 m under the present groundwater level. The bottom of the stone was never archaeologically established, but it is reasonable to assume that it was at the bottom of the wall, about –5.0 m. Even if the stones in the wall are no longer visible, there are a few more or less complete ones placed nearby on the surface above or near the remains of the wall. On one of the rows, each stone had a three-line cuneiform inscription saying that Nebuchadnezzar built the palace wall in limestone (i-na NA₄ KUR-ᵰ, in mountain stone). At the northwest corner of the northern outer wall

Fig. 3.26. North Palace. Deep into the foundations of the east side of the first principal room south of the West Courtyard. South façade of the massive 17 m wall (red), covered by the lower +8 m terrace of brickwork on which the remains of the foundations are standing, with brickwork between the walls. The floor of the palace was at the top of the preserved walls in the background at +15 m. Photo: Pedersén, March 2019.
of the North Palace, a limited excavation in 1912 was able to establish a continuation of the 263 m-long limestone wall. This probably also continued along the 160 m west façade of the North Palace, even if further deep excavations have not, so far, been possible there. At the corner, two rows of stone carried the inscription. Calculations show that some 1,500 large limestone blocks were required for the construction of this stone section of the wall. Later Iraqi excavations have done more explorations in the west, but they were limited in depth owing to the groundwater level. Details will be discussed below.

All upper parts of the palace and a large part of the foundations and the terrace under the palace have been removed by brick miners, but some impressive remains of foundation walls and large islands of the terrace are still standing (Figs. 3.26, 3.27). The terrace (Figs. 3.24, 3.25, 6.2), occupying roughly the southern two-thirds of the enclosed palace area, consisted of a terrace section under the main palace building and separate terrace sections 22 m northwards, 48 m westwards and 25 m (with additional ca. 50 m) eastwards. The sections could be interpreted either as expansions to the north, west and east, or as sections separated with expansion joints to avoid unintended cracks in a too-large terrace. Or there could have been a combination of reasons. Koldewey suggested that the palace continued westwards with one additional courtyard, but as the west wall consists of brick fragments this seems questionable and has not been followed here.44

---

43 Wetzel 1930, pl. 5; Koldewey 1990, figs. 110, 111.
44 Koldewey 1931, pl. 1; Koldewey 1932, 5, 14–17, pl. 4.
The section under the main building had, to the north, a baked brick wall with asphalt mortar as the main building. The terrace was constructed with brickwork of mostly broken or low-quality bricks with lime-gypsum mortar, with two main levels. A first level of brickwork had the top at +8 m, covering an earlier first step of the construction of a north wall just mentioned above (Figs. 3.25, 3.26). The +8 m terrace corresponds to the middle level of the South Palace, with the same height.

On this first terrace stand all the inner walls, which are constructed in very good brickwork with lime-gypsum mortar. Further construction levels of these walls can be seen at about +9 m, +11 m, +13 m and finally +15 m. These may show the gradual increase in height of the palace level, or just changed conceptions during construction. The main floor level of the North Palace was at +15 m and the walls on the lower levels served here as foundations for the walls at the higher level. Between the foundation walls was a fill of brick work, similar to the lower terrace, up to +15 m. On this level, according to the German excavators, the final palace walls had stood, but they had been almost completely taken away by brick miners before excavations began.45

In the digital model, platforms have been placed on the terrace, following essentially the construction levels mentioned above, at +4 m, +8 m, +11 m, +13 m, and +15 m. This interpretation can give some meaning to the reported construction levels, but does not fully explain all the changes in the wall construction from a chronological point of view.

In the ruins, the very good bricks of some foundation walls that are still standing can be seen contrasting the low-quality brick infilling between the walls in order to provide a foundation for the palace floor at +15 m elevation. Some walls had such good-quality lime-gypsum mortar that the brick miners could not take the bricks away without destroying them, and instead let the walls remain standing; however, they often undercut areas, which resulted in the collapse of the structures, with wall sections left lying around in the areas between the still standing sections (Fig. 3.27).

3.3.2 North Palace: Water installations

Integrated into the lower part of the North Palace, including the terrace, was an advanced water system, which owing to lack of excavation is only partially understood. It has been partly discussed by Koldewey, who even imagined that it might cover the whole palace area, including not only the North but also the South Palace.46

The German excavators exposed the main 13 m-wide west–east water canal inside the North Palace in its eastern section (Figs. 3.24, 3.28, 3.32, 6.2).47 The western and middle sections of the canal have never been excavated, but the western section of the north wall of it has been followed near the modern surface. Therefore, we do not know if there was a water inlet gate in the west palace wall, perhaps even allowing boats to enter, or if for security reasons all water entered through covered, secured small channels. The main

45 Koldewey 1932, 5–33, pl. 6.
46 For references, see the following discussion with its detailed references.
47 Koldewey 1932, 2, 30.
canal was later made narrower, just 1.8 m wide along its southern side was used (Fig. 3.30), and probably covered over; most of the previous middle and north canal area was used for a 9.5 m-wide street. The archaeologically exposed area was later completely refilled with earth, and part of it now forms the north section of the paved area around the stone lion (which still stands at the same spot as during the excavations, though on a new, higher base).

In the north external wall of the North Palace, there was a series of openings of channels bringing water into the palace through the wall from the moat (Fig. 3.23). The eastern channel, near the Processional Way, was unearthed by the German excavations in 1911 when the groundwater level was low. A few metres above the channel, there was a door. The entrance to the canal was protected by a stone grid (Fig. 3.29). The corresponding upper doors of the two western channels have been exposed by Iraqi excavations; the fourth has been assumed here for structural reasons, giving a regular façade.48

The small inlet channels continued southwards until the main west–east canal, the channel openings having door openings above them on the north side of the main canal

---

48 Koldewey 1932, 32–33 and site observation.
Fig. 3.29. North Palace. North wall from inside, looking north. The upper third of the picture shows a door opening in the north wall (above red markers). The middle section is destroyed brickwork and a stone block. The lower third is a canal with two gridded gates for water inlet. Photo: Buddensieg, October 1912 (Bab Ph 2721, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 3.30. Excavation of the eastern end of the west–east canal inside the North Palace, looking north. On the embankment was the German elevation ±0 m (yellow). Later walls, narrowing the canal, are in place. One water inlet was in the covered canal under the door opening. Photo: Buddensieg, January 1912 (Bab Ph 2548, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
(Fig. 3.30). On the opposite south side of the main canal, another series of channels enter under the terrace of the North Palace. German archaeologists exposed the two to the east at their entrances and followed them inside for some distance (Fig. 3.31). Koldewey assumed that a series of such channels would have been found had the excavation of the main canal been continued in a western direction. They would have allowed a rich supply of water to the North Palace, but also to the South Palace, taken up by means of wells and mechanical lifting facilities, giving ample water supply for the palaces (including possible gardens). A series of such wells has been established for the South Palace but, owing to lack of proper excavation, with one exception not yet for the North Palace.49 If all else failed, there was always the possibility of using people instead of mechanical means to raise water: in the early Achaemenid period, gardeners (nukaribbu) and water drawers (dālû) are attested for both the large palace (ekallu rabû) and the new palace (ekallu eššu) in Babylon.50

49 Koldewey 1932, 2, 30.
50 Abraham 2004, 235–236 No. 18, from Darius I, year 25.
3.3.3 The North Palace and the Gardens

In addition to the general archaeological Sections 2.3, 3.1, and 3.3.1, a somewhat more detailed consideration of the historical evidence will be given here.

Nebuchadnezzar’s first step in the extension of the palace area northward was just the construction of the fortification (ḫalṣu) in the river and to the north of the North Palace (Fig. 3.2) (see Section 2.3).

The main second step is concerned with the North Palace (Fig. 3.3). It is described in fragmentary clay cylinders. At a distance of 360 ammatu, or 180 m, from the front city wall Nēmet-Enlil, Nebuchadnezzar built two strong embankments (kāru) and a high wall (dūru) from the river to the Ištar Gate. Between the walls he built a packing of baked bricks (pitiq agurri) with a large top building (kummu rabû) joined to the palace in the city. The distance, measured along the Processional Way, agrees with the north façade of the second west–east wall, inside which the whole main terrace was placed. In connection with this step, the texts also mention the corresponding walls around the area on the east side of the Processional Way north of the Ištar Gate, also at the distance 360 ammatu, 180 m (for the East Fortification, see Section 3.5).

Another text gives some further details. Nebuchadnezzar made the two embankments (kāru) 32 bricks and 23 bricks thick; the first being the same west–east wall, the other the connection to the Ištar Gate. The distance from the front city wall Nēmet-Enlil given in the inscription, 335 ammatu, or 167.5 m, agrees with the inside measurement to the south façade of the wall. The building description refers to a packing of baked bricks (pitiq agurri) with a large top building (kummu rabû) and some terraces (gigunâtu, plural of gigunû). These two words are normally used for the ziggurat and have here a special, more secular, use; kummu is usually the top building of a ziggurat and gigunû is the terraces of the ziggurat or the ziggurat itself.

Nebuchadnezzar describes, in cuneiform texts on clay cylinders and on the great stone tablets, the construction of the third and final step of the North Palace (Fig. 3.4). This time, the reference is to embankments at a distance of 490 ammatu, or 245 m, from the front city wall Nēmet-Enlil. The distance agrees with the northernmost west–east wall, measured along the Processional Way. This enlarged North Palace is again said to have a large top building (kummu rabû) as a royal abode and was joined to his father’s palace, which must be the South Palace. According to the inscriptions, the work was completed in 15 days (whatever that extremely short period may mean). Possibly this refers to the conclusion of the work started during the two previous steps. Magnificent

51 Langdon 1912, 188–189 Nebukadnezar 21; Weiershäuser – Novotny 2022, Nebuchadnezzar II 22.
52 Goetze 1946; Frame 2014; Weiershäuser – Novotny 2022, Nebuchadnezzar II 21. In this text the king is more humble than usual, giving credit to his father for the start of the construction of the outer city wall, and the measurements are slightly less than the normal principles with one or two bricks fewer than excavation showed.
53 Streck 2018.
wooden constructions at the roof and the doors, including metal details, adorned the palace. At the top were crenellations of blue-glazed brick. 54

Berossos (ca. 330–ca. 270 BC), owing to his background the most authoritative of those writing in Greek about Mesopotamia in the Hellenistic period, was a priest of Bêl (Marduk) from Babylon who according to one tradition moved to the Greek island of Kos. Sometimes he is even identified (not without chronological problems) with the šatammu Bêl-rē’ūšunu in Babylon. His “Babylonian History” dedicated to the king Antiochus I (281–261 BC) has been preserved only in long quotations by others, but it is clear that he had deep insights into ancient Babylonian history and cuneiform culture. 55

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 15 days.

54 Langdon 1912, 116–119 Nebukadnezar 14, 138-139 Nebukadnezar 15; Wallenfels 2008; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 23.
Within this palace he erected lofty stone terraces, planting them with all manner of trees and constructing the so-called Hanging Gardens, because his wife, having been brought up in Media, had a passion for mountain surroundings. The similarity to the Babylonian historical inscriptions concerning the North Palace is obvious and shows that Berossos knew and belonged to the same tradition. What he called his father’s palace fits the South Palace and his second palace corresponds to the North Palace. A simple reading of the text would be that he placed what was called the “Hanging Gardens” in the North Palace.\footnote{Josephus 1966, Against Apion I 135–141 citing Berossos followed by a summarised critical reference by Berossos to other Greek authors’ opinions on the central place of Semiramis in Babylonian history in I 142. Studies discussing Berossos’ placement in relation to the Nebuchadnezzar inscription include Wiseman 1985, 56–59, and Bichler – Rollinger 2005, 202–206, but only Beaulieu 2006, van der Spek 2008, Rollinger 2013, 152, and Streck 2018 clearly state that Berossos located the gardens in the North Palace.}

Earlier Greek authors such as Herodotus (ca. 484–425 BC) never mentioned the gardens. Later authors such as Diodorus Siculus (1st century BC) added several details about the construction of the gardens.\footnote{Diodorus Siculus 1946, II.10.} He gives the length, width and height of the gardens as 4 plethra × 4 plethra × 50 cubits, or approximately 120 × 120 × 23 m, which is not so far from the size of the part of the terrace with the main building of the North Palace. It is unclear if the information may be based on Ktesias (ca. 400 BC) and draw on real evidence. It is not the intention here to further discuss other Greek and Roman authors who visited Babylon, or at least claim to have done so, and who have been of interest either because they mention the gardens or did not do so. The foreign and later traditions about Babylon and the Hanging Gardens have been and will continue to be discussed by others.

Koldewey clearly acknowledged that Nebuchadnezzar’s inscriptions and Berossos were talking about the North Palace, but despite that he placed the Hanging Gardens on the vaulted chambers in the northeast corner of the South Palace for reasons that...
have not convinced others (Section 3.2.2). Most scholars have accepted the identity of Nebuchadnezzar’s North Palace and the palace described by Berossos, but have then tried to place the Hanging Gardens in various parts of the central palace area in Babylon or elsewhere and not in the North Palace. Nagel, Damerji, and possibly also Reade wanted to have the gardens on the West Fortification. Wiseman preferred north of the West Fortification. Rollinger advanced much of the evidence presented here, but does not seem to have pointed to any clear position of the gardens. Streck has collected the arguments for placing the gardens in the North Palace based on cuneiform texts. A few have even opted for the alternative that the gardens were not in Babylon but elsewhere. Budge suggested confusion with Hamadan, and Dalley tried Nineveh.

Fig. 3.34. North Palace. Main building on the terrace with 7.5 m-wide, recessed door openings in the south wall of the courtyards to the principal rooms. Blue-glazed crenellations. Model: Pedersén.

A combination of textual evidence and archaeology would allow a preliminary reconstruction of stepped terraces with trees (Fig. 3.23, 3.32, 6.2). The height of the main terrace is +15 m, the embankment 22 m north of the palace has its upper surface at ±0 m and the water in the canal would be about −3 m. In the other directions, the slope does not have to be so steep, but excavations are essentially lacking here.

An old local tradition in Babylon before the German excavations started tells of a very old tree, said to go back to Babylonian times and to be the remains of the royal gardens. It was called Athle, from Arabic اثل, tamarisk, with remains standing some 80 m west of the stone lion in the northern part of the area here proposed for the Hanging Gardens.60

It is possible to get some idea of the upper parts of the North Palace despite the fact that it is destroyed and there have not been enough proper excavations. First, the layout of the walls and even details of construction can be assessed by means of projecting the preserved foundation walls upwards. This gives us most of a basic plan of the building, especially the central, best-preserved and most widely excavated part, including many of the walls with the door openings. It is clear that we are dealing with a well-built palace centred around two main inner courtyards with the principal rooms on their south side.

The East Courtyard was 34 × 37 m or 1,260 m², with a principal room of 31 × 11 m to the south, beyond which was another room of about the same size. The West Courtyard was only slightly smaller, 33 × 35 m or 1,160 m², with a principal room of 21 × 9 m to the south, and another room of the same size beyond it. The door openings to the principal rooms south of the courtyards are 7.5 m wide with recesses (Fig. 3.34); that is, they are wider than the doors to the throne room in the South Palace, but not so wide as the main door in the Annex there.

It may also be possible to say something about the floors in the North Palace, especially in the courtyards. In addition to the common baked brick floors, at least part of the palace had a floor of 66 × 66 cm paving stones, made of limestone and sometimes sandstone or basalt. A limited number of such stones, mostly fragmentary, have been found with a cuneiform inscription saying “Palace of Nebuchadnezzar” on one edge (Fig. 3.33).61 If the main courtyards in the North Palace had a pavement of such stones, as suggested by the German excavators, 5,600 stone slabs of that dimension would have been required. Most stones must have been taken away for reuse elsewhere before excavations started.62

Cuneiform inscriptions give some detail about the now missing upper parts of the building. For the roof, different kinds of wood were used: mighty cedars (erēnu), produce of the high mountains; strong firs (ašūḫu); and fine choice cypresses (šūrīnu). The doors were made of rosewood (musukkanumu), cedar, cypress, ebony (ušū), and ivory (šiinu), with mountings (iḫzū) of silver and gold, with plating (taḫluptu) of bronze, with thresholds (askuppu) of silver and door poles (nukuššū) of copper. On the top of the walls

60 Porter 1822, 369–370; Rich 1839, 66.
61 Weiershäuser – Novotny 2022, Nebuchadnezzar II 8, 9, with some variation.
were crenellations (kilīlu) of lapis lazuli blue-glazed bricks.\(^6\) This is basically the same materials as for the South Palace (mentioned earlier in the same cuneiform texts) but with important additions giving variety and exclusivity. New on the list are the strong firs and the choice cypresses for the roof, the doors of rosewood, cypress, ebony and ivory, the mountings of silver and gold, and the thresholds of silver (not copper as before). Also, the blue-glazed wall tops are an addition. Combining this information with the excavated details gives a picture (Fig. 3.34) of the North Palace, with its two large courtyards each with principal rooms to the south, with 7.5 m-wide recessed door openings.

The construction work on the North Palace, in common with other major building projects in Babylon, and as attested for e.g. the South Palace (Section 3.2.7) and the ziggurat (Section 4.3.2), was divided between a number of institutions in the empire as corvée labour for the king (dullu ša šarri). Some documentation of the Eanna temple in Uruk’s share of such work on the North Palace in Babylon has been collected from Nebuchadnezzar year 19 to year 29, i.e. 586–576 BC.\(^6\) The building materials were temporarily stored outside the Enlil Gate of the city wall. This means that the materials

---

\(^{6}\) Langdon 1912, 116–119 Nebukadnezar 14, 138–139 Nebukadnezar 15; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 23.

Fig. 3.36. North Palace. Two basalt statues. The one on the right, with inscription of Puzur-Istar of Mari, ca. 2040 BC, is 1.70 m high (including head). Bab 64983, Istanbul EŞEM 7814. Bab 65774, Istanbul EŞEM 7813. Photo: Buddensieg, September 1914. (Bab Ph 3550, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 3.37. North Palace. Limestone stele of Šamaš-reša-ūṣur of Suḫu and Mari, ca. 770 BC, 1.20 m high. Bab 3381, Istanbul EŞEM 7815. Photo: Koldewey, October 1899. (Bab Ph 38, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
had to be transported by boat from there over the river to the construction site. It must be stressed that this temple was just one of the contributing institutions and even here the documentation is far from complete.

In the eastern part of the North Palace, several stone sculptures from various periods and areas of origin have been unearthed. An oversized, unfinished lion, 1.95 m high, with different suggested places of origin and dates, has been an outdoor symbol of the Babylon archaeological site for almost two centuries; it is presently on a high pedestal from about 1930 that replaced a low 19th-century socle put up before the German excavations (Figs. 3.28, 3.35, 5.30). In about the same area, several other stone sculptures were found. They are now in museums, the more complete in Istanbul.

The oldest sculptures are a series of statues of rulers in basalt, more or less complete, from Mari. Two are fairly complete (Fig. 3.36); one of them has an inscription of Puzzur-Ištar allowing a date of about 2040 BC, i.e. some 250 years before Hammurapi. Before the German excavations started, the Berlin museum had purchased a head, which turned out to complete the later-excavated body. From the same geographical area, but much later, are a stone stele of Šamaš-rēša-uṣur of Suḫu and Mari, ca. 770 BC (Fig. 3.37), and a stele showing a weather god with a Luwian hieroglyphic dedication to the weather god of Aleppo from about the same period. Another fragmentary stone lion has the surface better worked out than the more complete standing lion on the site. The latest dated fragmentary stone stele fragments from the North Palace date to Darius I (522–486 BC), so even if the collection of sculptures started early, it continued into later periods.

A large archive of cuneiform texts with more than 1,000 clay tablets and fragments was found during the German excavation in the eastern part of the North Palace. Such tablets had been found here even before excavations started. Iraqi excavations have subsequently unearthed some 300 additional tablets in the same area, possibly from the same archive. The tablets from the German excavations had been exposed to a serious fire, often resulting in the disintegration of parts of one side of the tablets. Most of the tablets are dated from 459–400 BC during the reigns of Artaxerxes I, Darius II and early years of Artaxerxes II, with a limited number being earlier. The archive owner was Bēlšunu, a native of Borsippa, who served as a governor of Babylon (pīḥāt Bābili) under the Persian Achaemenids. When he was later appointed governor of Syria, his son Erībaya took over as governor of Babylon. The tablets deal with his personal business, not his actions as governor. He may have had his residence in the North Palace.

There are other possible Achaemenid traces. It has been suggested that the layout of the courtyard with the wide doors in recesses may be an Achaemenid tradition, as in

---

67 Pedersén 2005, 144–184 N6. This is Belesys, satrap of Syria, with a palace and a large and beautiful garden in northwest Syria according to Xenophon 1980, Anabasis I.4.10. Stolper 1987 (and other articles by the same author) has presented basic studies of the archive.
Susa; Koldewey took the opposite view, that the Babylon doors influenced the Achaemenid ones (see discussion in Section 3.26 in connection with the westernmost Annex Courtyard of the South Palace).\textsuperscript{68} A number of Greek Hellenistic black pottery and Greek terracotta items show the continued use of the North Palace for long periods after the main construction phase.\textsuperscript{69}

The northern section of the North Palace between the two main west–east walls is called the North Fortification (UTM 445600E 3601040N, Figs. 3.4, 3.23). At the beginning of the German excavations, it was thought to be a separate palace, but when excavations of the area started no such building remains were found. The area could have been used for storage or for military protection.\textsuperscript{70}

3.4 West Fortification
The West Fortification in the river (German: \textit{westliches Vorwerk im Fluß}) covers an area of 22,000 m\textsuperscript{2} or 2.2 ha, some 300 × 75–95 m, excluding the 14 m-wide embankment (later with additional 10 m) on the west side. The German excavations were chiefly conducted in 1906–1907 with minor additional work in 1912. Owing to the presence of date palm gardens in the area, the German excavators were allowed to excavate only with narrow pits and tunnels, resulting in a rather provisional understanding of the large building. The unexcavated northwest part was under the former Kweiresheh village and is now under the eastern part of the new hill with the Saddam palace (UTM 445420E 3600740N, Figs. 2.2, 3.38, 3.39, 6.2). See also Section 2.3.

The whole northern part of the building, as shown here, has not been excavated but

\textsuperscript{68} Gasche 2013.
\textsuperscript{69} Deubner 1957; Klengel – Cholidis 2006, 147–603 Spätzeit (Achämenidische, seleukidische und parthische Periode).
\textsuperscript{70} Koldewey 1932, 30–32.
is a logical join of the continuation of the western wall of the West Fortification with a western extension of the 17 m-thick, probably unfinished, west–east wall under the North Palace as suggested by the German excavators. The building was constructed with baked Nebuchadnezzar bricks and asphalt mortar. The outer walls were some 20 m thick, at least partly to compensate for the placement of the building in the river. The German excavators reported several restructurings, with altered walls inside the building possibly indicating changes in use. Perhaps the asphalt levelling, with sand above, in the north section of the southern courtyard could be the lower remains of a floor at about +1 m.\footnote{Koldewey 1932, 27–29, pls. 9–13; Koldewey 1931, pl. 1.}

The West Fortification was constructed on the convex eastern bank of the increasingly meandering river. As such, it was a naturally expanding area, which created both strategic problems and possibilities for expansion. The embankments at the South Palace had been moved westwards during Nabopolassar’s time and again early in the reign of Nebuchadnezzar. Finally, the major move westward was the construction of the West Fortification in the river. The building not only had very massive walls but a large embankment area next to the water. It would have been ideal not only as a protection for the palace, but also for storage of products and objects arriving by boat (\textit{Figs. 3.2, 3.3, 3.4, 3.39, 3.42}).

Nebuchadnezzar describes the construction of a large fortification (\textit{ḥalṣu rabītu}) with asphalt and baked brick in the river (\textit{ina nāri}) as protection for Esagil and Babylon, so it

\textit{Fig. 3.39. West Fortification, with 20 m-thick walls and a massive embankment, all built in the river beside the South Palace. Model: Pedersén.}
should not be dry land (*nābalu*) in the Euphrates.\(^{72}\) It seems that the massive, 17 m-thick wall of the first step of the construction of the North Palace was also called fortification (*ḫalsu*), something that may support the German archaeologists’ suggested reconstruction of the northwest corner of these fortifications.\(^{73}\)

### 3.5 East Fortification

The whole East Fortification (German: *östliches Ausfallvorwerk*) covers an area of 55,000 m\(^2\) or 5.5 ha, some 210 × 240–280 m, on the east side of the Processional Way immediately north of the Ištar Gate (UTM 415890E 3601030N, Figs. 2.2, 3.3, 3.4, 3.42). The inner part of the East Fortification has an area of 40,000 m\(^2\) or 4.0 ha, some 150 × 260–280 m. The German excavations here were conducted in 1910–1911, with minor work in 1904 and 1913 (Figs. 3.40, 3.41). No brick floor was reportedly excavated inside the building; only the level of the remains of paving in the middle door in the eastern wall could be measured at −2.3 m.\(^{74}\) This is almost the same as the lowest attested level of the Processional Way in the Ištar Gate (see Section 2.4).\(^{75}\)

The same inscription that described the wall of the North Palace 180 m from the old front wall Nēmet-Enlil, west of the Ištar Gate, adds that Nebuchadnezzar also built a strong wall (*dišūr datnu*) in baked bricks and asphalt 180 m from Nēmet-Enlil on the eastern side of the gate.\(^{76}\) This is the inner main part of the East Fortification.

### 3.6 The central palace area

Following the presentation and discussion of the presently known elements of the central palace area in Babylon above, a few questions need to be considered (Fig. 6.2). Common themes of the royal inscriptions of Nebuchadnezzar concerning the palaces were the splendour of the king, protection, and storage.

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 suggest the original splendour. Even a terraced garden has impressed visitors from the West.

Another aspect seen in the inscriptions, and noticeable in the type of building construction and the placement of the structures, is the importance of protection, not

\(^{72}\) Langdon 1912, 106–107 Nebukadnezar 13; Da Riva 2012, 54.

\(^{73}\) Langdon 1912, 86–87 Nebukadnezar 7, cf. Koldewey 1931, pl. 1; Weiershäuser – Novotny 2022, Nebuchadnezzar II 12.

\(^{74}\) Koldewey 1932, 33–36, pls. 14–16.

\(^{75}\) Pedersén 2018a, 168–170, fig. 9. Bergamini 1977, considering higher water levels than here, suggested that the East Fortification was a water reservoir for the moat.

\(^{76}\) Langdon 1912, 188–189 Nebukadnezar 21; Weiershäuser – Novotny 2022, Nebuchadnezzar II 22.
only of the palace itself but also of the city and of the main Marduk temple.

As we have seen, large quantities of precious objects, valuable materials, very large quantities of barley and dates, sesame, oil of sesame, wine, etc. had to be kept in storage, either inside the palace or next to it (Sections 3.2.2, 3.2.7). It may have been possible to keep some of this material in the vaulted chambers, but commodities such as barley and dates needed much larger spaces. The West, North, and East Fortifications would have been excellent for bulky stuff (Fig. 3.42). East of the South Palace, next to the Ninmaḫ
temple, was another exposed storage facility (Figs. 5.2, 6.2), and some facilities may have been located in the unexcavated area south of the South Palace, but they may well have been carried away by the later floods that affected the area.

The baked brick walls in the palace area, as represented in the digital model (Fig. 3.42) amount, according to the ArchiCAD program used, to 1,508,000 m$^3$, which corresponds to 137,000,000 baked bricks for the walls from the foundation to the top. Comparison with the calculation in Section 2.7 shows that most of this brick volume, some 1,122,000 m$^3$ or 102,000,000 baked bricks, are from the very massive (4 m- to 20 m-thick) external palace walls. The inner palace walls, being mostly only some 1 m to 2 m thick, contributed far fewer bricks to the total. Not included in the calculation are the terraces, brick floors on several levels and many of the underground kisû. Alternative heights of the walls would require modified numbers. To cover all aspects would have required some 250,000,000, or possibly 300,000,000, baked bricks for the building activities in the central palace area, mostly during the reign of Nebuchadnezzar. For the baked brick walls, 10% of the total volume, or 151,000 m$^3$, would have been taken up by mortar, either asphalt or lime-gypsum.

---

77 Damerji 2012, 49–50 fig. 51.
3.7 Summer Palace

The palace at the northernmost spur of the outer city was called the Summer Palace (German: *Sommerpalast*) by the German excavators because of what they interpreted as ventilation shafts in some of the principal rooms. Situated just inside the city walls, it had a strategic defence function for the outer city (UTM 445640E 3600040N, Figs. 2.1, 2.6, 2.16). 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 an area of at least 26,000 m² or 2.6 ha, some 173 × 153 m; but especially in the east, under the modern street, this has not been established with certainty, and the palace may well be larger there. The German excavations were conducted in 1914–1915. They were supplemented by Iraqi work around 1980. As the brick miners were able to continue taking away the bricks here for several years after they were stopped elsewhere in Babylon, many uncertainties exist.

The Babil mound is the highest ruin in modern Babylon, with a top at +25 m. The ancient river passed just west of the tell in the low-lying area, and an embankment separated it from the palace (see Section 2.3). On the east side, a main road constructed in the 1920s and expanded in 1981 cuts a bit of the tell. Beside the road is the base of the previous railway (relaid in 1986), and outside this, where the modern terrain goes lower, was the outer city wall surrounded by the moat filled with water (Fig. 3.43).

The Summer Palace was centred around two main inner courtyards with the principal rooms south of them (Fig. 3.44). The East Courtyard was 36 × 45 m or 1,600 m² with the principal room (35 × 12 m) to the south. The West Courtyard was somewhat smaller,

---

78 Koldewey 1932, 41–62, pls. 32–34; Nasir 1979b.
30 × 41 m or 1,200 m², and had to its south its principal room (20 × 10 m) with another 20 × 9 m room behind it. The so-called ventilation shafts or niches can be found in the south walls in the east principal room and in the room behind the two west principal rooms. The external walls of the palace are here assumed to be founded at about −3.0 m, whereas the foundations of the inner walls have been put at ±0.0 m, pending detailed examination. Traces of the external walls have been found only at two places on the south side of the palace, making exact exterior dimensions only an estimate pending further archaeological site work. The floor of the palace of Nebuchadnezzar has been established by the German excavations at about +21.0 m.79

The walls are of baked brick with lime-gypsum mortar. Just inside the outer walls, under the floor of the rooms are a construction with bricks and mortar as a kind of kisū, whereas deeper inside the palace there are broken bricks on a layer of sand under the floor. An indication of widespread stone flooring, perhaps in the courtyards in the Summer Palace, is the large number, about 100, of fragments of mostly limestone paving stones registered by the German excavators. The stones, originally of the size 66 × 66

---

cm, often bore an inscription mentioning “Palace of Nebuchadnezzar”. If such stones covered the two courtyards, 6,430 stone slabs of that size would have been required.

According to an inscription on clay cylinders, the Summer Palace had the name “Nebuchadnezzar may long live, the provider for Esagil”. The palace was built, to protect Babylon, beside the new outer city wall at its northernmost point as a strong spur (appu dannu) along the Euphrates (Fig. 2.16) with the size of 60 ammatu (or 30 m). The 30 m cannot be taken as the length here; as already mentioned, that is in reality much greater. However, as the 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 groundwater. The palace is said to be a copy of the Kadingirra palace (ekallu mihir 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. Roofs were of cedar (erēnu), doors of cedar with plating (taḫluptu) of bronze, and thresholds (askuppu) and door poles (nukuššû) of copper.

The palace continued to be used and rebuilt for several centuries. Possible Achaemenid rebuilding may include the wide doors to the principal rooms and the ventilation channels in the walls. The finds of Greek roof tiles, as well as Greek wall and floor plaster, point to a Greek Hellenistic reconstruction. The Parthian grave chambers cutting the wall in the eastern Main Courtyard indicate that the palace was in ruins at that time. A main reconstruction of the area occurred in the Sasanian period when the palace area was transformed into a 180 × 180 m fortification with massive mudbrick walls and half-round towers (Fig. 7.18). Some of these late walls are still standing high, as they were of mudbrick and therefore of no interest to the brick miners (see Section 7.6). More work is needed to trace these developments.

We do not know if there were any additional palaces in Babylon in the same periods, e.g. in the south or on the west side of the old river. Future examinations may show something still hidden.

80 Koldewey 1932, 45–46.
81 Langdon 1912, 118–121 Nebukadnezar 14; Weiershäuser – Novotny 2022, Nebuchadnezzar II 23.
4 Babylon: Temples

Abstract
An overview of the known temples in Babylon, chiefly from the Neo-Babylonian period. Attempts are made: to distinguish different building phases, using the results of German and Iraqi excavations combined with cuneiform and other ancient texts; to relate these to the remains now to be seen in Babylon; and to give reasonable interpretations of the buildings, e.g. of the temple tower.

4.1 Introduction
This chapter offers a basic preliminary critical discussion and overview of the different sources relating to the most common monumental buildings in Babylon, the temples (among which the ziggurat, or temple tower, of the Marduk temple is counted). The archaeological material from German and Iraqi excavations will be critically evaluated and combined with ancient cuneiform and other texts in order to build a digital architectural model of Babylon, using modern building construction computer techniques. This model can test the feasibility of specific measurements of the construction.

The presentation below will follow the list of Babylon temples in tablet 4 of the five-tablet set of cuneiform texts called Tintir, or Tintir = Babylon. It is a text dated by some modern scholars to the Middle Babylonian period but, when possible to document, it seems to agree quite well with the Neo-Babylonian situation. It lists temples within the traditional city walls of Babylon on the east and the west side of the Euphrates in the various city areas.¹

All 43 of the temples listed in Tintir will be mentioned below, along with the city area to which each belonged (Fig. 4.2). Eight of them have been excavated. The four of these situated more to the north have been reconstructed on the remains of their walls in Babylon, following the interpretation of the German school of excavations. They are the Nabû, Ištar, Ašratum and Ninmaḫ temples. The four excavated temples more to the south have not been reconstructed: the Marduk temple, the ziggurat, the Ninurta and Išḫara temples. Some of their remains now can be seen, but others are completely covered by earth (Figs. 4.1, 4.2). The (more or less) excavated temples will be discussed

¹ George 1992.
in some detail, including the reconstructions now standing in Babylon on the ruins. The different levels exposed by the German and Iraqi excavations will be examined and their relationship with possible elevations of adjoining streets and other buildings will be discussed.

Related to the temples, and sometimes even included among them, are a large number of daises or pedestals (parakku) mentioned e.g. in Tintir. For these see Sections 2.4, 6.3 (Figs. 2.28, 2.32, 6.9).\(^2\)

There is possible textual evidence for the Marduk temple in the Early Dynastic period, about 2400 BC (see the following section). Other temples in Babylon are mentioned in an Old Akkadian year name of Šar-kali-šarri, and two later copies of building inscriptions of Narām-Sîn and Šar-kali-šarri concerning temple constructions.\(^3\) There are several references to temple constructions from the Old Babylonian period onwards, but the secure archaeological evidence starts from the late Neo-Assyrian domination in Babylon and there is a lot of material from the Neo-Babylonian period, especially the long reign of Nebuchadnezzar II (604–562 BC). For several temples there is documentary evidence of their use into the Achaemenid, Hellenistic and early Parthian periods (see below under the individual buildings).

The elevations given in the following are based on the German zero elevation ±0.0 m

\(^2\) George 1992.
\(^3\) Sollberger 1985; Frayne 1993 E2.1.4.29, E2.1.5.5; concerning an Ištar temple, but it is not known which one of several such temples in Babylon.
Fig. 4.2. Plan of Babylon with excavated temples (in roman type) and unexcavated temples (italic type), placed in the city areas where they stood according to cuneiform texts. Around the Marduk temple were a series of 12 more temples not indicated here. 500 m UTM coordinate grid on map. For the same map with other content see Figs. 1.4, 1.5, 2.1. More details on Figs. 2.28, 6.2, 6.9. Downloadable. Map: Pedersén.
on the embankment of the now infilled canal inside the North Palace, next to the modern placement of the well-known stone lion. However, this was also said to be the normal medium groundwater level at the beginning of the German excavations. The German elevation ±0.0 m equals 25.5 m above sea level according to modern nearby benchmarks of the municipality of Hillah measured by the WMF. The integration of the elevations of the Iraqi excavations of the Nabû temple is approximate, pending precise documentation.

4.2 Marduk temple
The temple for Babylon’s main god Marduk (UTM 44°5670E 36°9720N) had the name Esagil (“House whose top is high”). It was situated in the Eridu area of Babylon on the south side of the west–east section of the Processional Way, south of the ziggurat area (Figs. 2.2, 4.1, 4.2, 4.3, 4.4, 6.2). The main temple was about 6,180 m² in area, 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 inside Tell Amran (or according to modern local pronunciation, Tell Omran), the second-highest tell in Babylon at +22 m above German zero or 47.5 m above sea level. On the top of the tell is the originally medieval grave building of Amran ibn Ali (عمران بن علي), rebuilt in 2018, which has given the tell its name.

The temple was first excavated by W. Andrae in 1900. He made a large, deep pit some 20 × 20 m in area and 20 m in depth, uncovering the northern section of the central courtyard and parts of rooms to the north of it (Figs. 4.3, 4.4, 4.5, 4.6, 4.8, 4.9, 4.10). 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 at the lower levels, and with tunnels between the bottom of the pits along the remains of the walls (Figs. 4.3, 4.4, 4.7, 4.8, 4.9). It is probable that there was an outer precinct, making the whole temple area much larger, but owing to lack of excavations this has never been conclusively proven.

With this excavation procedure, only part of the central courtyard and parts of the rooms north of it have been properly excavated in the large pit, and have produced finds. For the rest of the temple, the small pits and the tunnelling allowed only a plan of the external walls, of the walls around the inner courtyard and of a selection of the inner walls, but there were almost no excavations inside the rooms.

The main temple has a double foundation platform of unbaked mudbrick. First, a 90 cm-thick layer of mudbricks, with the base at +0.2 m, goes under all the rooms and the courtyard. Upon this stand the inner walls; the position of the outer walls in relation to the foundation is not known. Between the inner walls are additional mudbrick structures up to +2.3 m. The outer mudbrick walls enclosed an area with a minimum size of 81 × 75 m and a maximum size of 86 × 79 m, depending where the measurements are taken, as the walls have projections and recesses. To the east was the entrance annex, of which

---

4 Koldewey 1911, 37–49, pls. 7–10.
5 Wetzel 1938, 1–13, pls. 1–5; Pit 30 is the pit without number on pl. 5e, never taken down to the Neo-Babylonian levels.
only the external façades have been traced; no excavation has been done inside (Figs. 4.8, 4.9, 4.10).

Because of the way in which the excavation was conducted, floors have been attested in the great pit but very seldom elsewhere in the small pits and tunnels. Remains of seven floor levels are preserved, the lower six in pairs of two in the great pit and the upper seventh in the tunnels. From the bottom are (Fig. 4.10):6

- Level 1 at +2.3 m (Floor n) with no known inscriptions on the mostly destroyed bricks;
- Level 2 at +2.4 m (Floor m) with no known inscriptions on the mostly destroyed bricks;
- Level 3 at +2.8 m (Floor l) with Esarhaddon stamp on one 39 × 39 cm brick and Assurbanipal stamps on 37 × 37 cm bricks;
- Level 4 at +2.9 m (Floor k) with Assurbanipal stamps on 37 × 37 cm bricks;
- Level 5 at +4.3 m (Floor h) with Nebuchadnezzar stamps on 33 × 33 cm bricks;
- Level 6 at +4.4 m (Floor g) with Nebuchadnezzar stamps on 33 × 33 cm bricks.

The uppermost Level 7, at about +5.6 m along the west wall of the courtyard and rooms inside, lacks any known inscriptions (Fig. 4.9).7

The external walls around the main building had an elaborate scheme of gradual projections and recesses, giving the façade an intricate, tower-like structure. All four exterior walls of the main building had a main entrance in the centre. The walls had two stepped layers of pilasters or, at the main doors, three layers, all giving the thick and high walls an intricate, tower-like structure that has not been found so systematically applied to any other excavated temple in Babylon. There are main towers at the four external doors and at the door to Marduk’s cella. The external walls of the annex and the other walls of the central courtyard had the regular pilasters (dublu) and recesses (ḫibšu) found at all other temples in Babylon. The walls are between 8.3 m and 6.0 m thick and the inner walls about 3.0 m. The remains of the external walls stand up to +4 m to +6 m, but inner walls are often better preserved up to +11 m, which is 5.4 m above the highest attested floor level and 11 m above the bottom of the foundation (Fig. 4.9). The digital model has higher wall sections where the wall is thicker. The maximum reconstructed height of the external walls is 16.5 m above the surface at +4.4 m.8

Outside the mudbrick walls is a 2 m-thick baked brick kisû, constructed in order to strengthen the walls’ lower parts (Figs. 4.8, 4.9). The lowest attested part of the kisû is ca. +2.4 m, but that does not seem to be the bottom of the construction. The highest attested level is +5.8 m. Owing to the small brick size with no inscriptions, it does not fit a regular Nebuchadnezzar dating, so it must be either earlier,9 or perhaps later, in the Seleucid period.10 The first of these two alternatives is followed here, but with the

---

6 Wetzel 1938, 10, pl. 4a.
7 Koldewey 1911, 44; Wetzel 1938, pl. 5e; Wetzel – Schmidt – Mallwitz 1957, 30.
9 Wetzel 1938, 4.
Fig. 4.3. Esagil and Etemenanki. Final aerial view after the German excavations. Excavations followed walls and streets by means of pits and trenches. For the resulting German plan of the same area see Fig. 4.4. Photo: Royal Air Force, August 1923. (AP87, © UCL Institute of Archaeology).
4.2 Marduk temple

Fig. 4.4. Plan of the Marduk temple Esagil, and the ziggurat Etemenanki to the north of it, surrounded by its precinct. The surroundings of Esagil have never been examined, but there were probably a series of other temples there within another precinct. The coordinates shown on the plan are not those used during the DOG excavations, but those invented later in Berlin and used during the DAI excavations. Wetzel 1938, pl. 2.
Fig. 4.5. Esagil. The large pit, some 20 × 20 m in size and 20 m deep. Courtyard and Rooms 6 and 12, cf. Fig. 4.6. Floor and remains of walls. Photo: Koldewey, October 1900 (Bab Ph 86, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
Fig. 4.6. Esagil. The large pit, partially filled in. The floor of Esagil is about 7 to 9 m below the bottom of the pit. Cf. Fig. 4.5. Photo: Pedersén, October 2017.

Fig. 4.7. Esagil. Some of the upper, partly refilled small pits, from which the walls of the temple were traced in tunnels some 20 m under the surface. Photo: Pedersén, October 2017.
Fig. 4.8. Esagil. Plan of main building and eastern entrance annex. The red marking is the large pit. Green markings show the 29 small pits, between which tunnels were dug along the walls. Wetzel 1924, Schmidt 1937 in Wetzel 1938, pl. 3.

Fig. 4.9. Esagil. South–north section in the main courtyard (yellow) with rooms and walls to the north and south (orange) in front of the main entrance to the Marduk cella. Between the red markings is the large pit. The green markings indicate small pits. Tunnels along the walls at about floor level. Wetzel 1938, pl. 5.
Fig. 4.10. Esagil. North–south section of the great pit excavated in 1900. Room 12 with south part of Room 7 and north part of courtyard (Hof) with attested floors. Levels 1 and 2 (n, m), Levels 3 and 4 (l, k), and the upper Levels 5 and 6 (h, g). Foundations and walls of unbaked mudbrick, floors of baked brick. W. Andrae 1900 in Koldewey 1911, pl. 10.
possibility of added height and alterations.

The central courtyard is about $31 \times 36$ m or $1,120$ m$^2$, which is much larger than the courtyards in any of the other excavated temples. The size of the Marduk cella is not known as it has not been excavated.

The walls had whitish lime-gypsum plaster over the mudbrick. Inside the temple, the floor had black bitumen covering the baked brick but, in the courtyards, the floor consisted of baked brick without any bitumen covering. According to cuneiform texts, the main cellas of Marduk, Zarpanitu, and Nabû were coated with reddish gold.11

A near-parallel temple was excavated in east Kiš or Hursagkalama in the 1920s by the British–American expedition. The somewhat smaller building has the façade, the inner courtyard and most of the rooms looking almost like a copy (with some modifications) of what has been established so far for the Marduk temple. Some of the mudbrick walls in Kiš are still standing several metres high. There was even an annex beside the main entrance, but much smaller than the one in Babylon, with a cella beside the central courtyard. The Kiš temple may have been dedicated to Ištar or served as a New Year temple, but that has not been confirmed by inscriptions from the temple itself. Another temple in a similar style is the Nabû temple in Borsippa, excavated in 1879–1882 by British, 1901–1902 by German and from 1980 on by Austrian expeditions. Owing to the incorporation of cellas for more gods, the temple building is somewhat larger.12

The cuneiform texts record a long history for the Marduk temple, which is attested chiefly from texts found outside Babylon. There is an Early Dynastic, possibly 2400 BC, reference to a Marduk temple in BAR.KI.BAR; it has been suggested that this is an old writing for Babylon.13 The Old Babylonian king Sābium reconstructed the Marduk temple in Babylon according to the year formula in his 10th year, i.e. 1835 BC. In the following 200 years, five other Old Babylonian kings gave different objects to the temple, such as statues, weapons and emblems.14 Then follows almost a millennium with hardly any documentation (that has been discovered so far) about the temple.

The Assyrian king Sennacherib destroyed the Marduk temple in 689 BC.15 The temple was rebuilt by Esarhaddon (680–669 BC),16 and the preserved documentation from

11 Da Riva 2012, 44–45; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2, 19, 31, 32.
13 Stephens 1937, No. 2; Sollberger 1985, 10.
Fig. 4.11. Esagil during Nebuchadnezzar’s reign. The main building is to the left with attested external walls and courtyard. The annex in the front has attested external walls, but the two courtyards have not been attested archaeologically. There may be several more buildings in the Esagil complex, now under the Amran tell. The ziggurat is to the north. Model: Pedersén.

Babylon itself starts from that period. The work was completed by Assurbanipal (668–627 BC). Nebuchadnezzar II rebuilt Esagil; the work was documented in numerous texts during the early years of his reign. Neriglissar (559–556 BC) rebuilt the kisû and the northern enclosure wall. Antiochus I (281–261 BC) rebuilt Esagil, and in 274 BC, according to the Astronomical Diaries, he had a large number of unbaked mudbricks (libittu) moulded upstream and downstream of Babylon, for the rebuilding. The temple survived into the Parthian period, about 90 BC, as is clear from the Rahimesu archive and related texts. On the other hand, also in the Parthian period (but possibly during

19 Da Riva 2013a, 118–119, 132–133; Weiershäuser – Novotny 2020, Neriglissar 1, 3.
21 Van der Spek 1998.
the later part of it), a large private house was constructed in the north of the temple area immediately south of the west–east street with its deepest floor level at +8.0 m. In Room E of this house, the German excavators unearthed in the remains of two baskets many Kassite, Neo-Assyrian, Neo-Babylonian and Hellenistic precious objects, at least some of which came from the Marduk temple. They were, however, broken and in the process of reshaping for reuse as new objects (see also Section 7.3, Figs. 5.6, 7.10).22

The so-called Esagil tablet,23 a later mathematical school tablet, gives some information about Esagil, before treating Etemenanki in somewhat more detail. The main doors of Esagil are mentioned by name. They are, starting from the entrance of the annex in the east and going to the west: Ka-maḫ (“Exalted gate”, German gate F) to the eastern annex; Ka-utu-ea (“Gate of the sunrise”, German gate A) to the main building; Ka-gal (“Great gate”, German gate h) to the cella (Figs. 4.8, 4.11). Then, going around the main building in an anticlockwise direction: Ka-lama-rabi (“Gate of the guardian angel”, German gate D); Ka-ḫegal (“Gate of abundance”, German gate C); and Ka-ude-babbarra (“Gate of dazzling wonder”, German gate B). The dimensions are given for the Grand Court (Kisalmaḫ), and for the Court of Ištar and Zababa, but their locations outside, or perhaps inside, the excavated building have not been clarified.24

The clay prism of Nebuchadnezzar with the so-called Hofkalender reports that in the seventh year of Nebuchadnezzar, 1,000,000 barley, 120,000(?) dates and 20,000 sappatu-jars of wine were stored inside the Esagil and somewhat more in the palace (compare Sections 3.2.2, 3.2.7, 3.6).25 The units of measurement for the barley and dates are not given, but if they are measured in normal kur (1 kur = ca. 180 litres) we have 180,000 m³ barley and 21,600(?) m³ dates. If we use the Neo-Assyrian sappatu (1 sappatu = 5 litres) we get 100,000 litres or 100 m³ wine. These very large quantities could not possibly have been stored inside the known parts of Esagil or in the precinct of the ziggurat. To place, e.g., the barley in the known and reconstructable areas of the precinct around the ziggurat would require that every available room was filled to a height of about 10 m with barley, which is hardly reasonable. Somewhere in the Esagil complex, there must have been large storage facilities that have not yet been excavated.

The digital model can be used to calculate the number of bricks used at the end of the reign of Nebuchadnezzar. The numbers are preliminary, owing to lack of detailed excavations and to the estimates of heights given above. This is the only known temple

---

22 Wetzel 1957, 31–32 34–45, pl. 15.
23 Smith 1876; Scheil 1914; Thureau-Dangin 1922, 32; Weissbach 1938, 49–79; and George 1992, 109–119, 414–434, pls. 24–25 with references to previous literature.
24 Wetzel 1938, pl. 3; George 1992, 83–91. The dimensions of the two courtyards according to the tablet are given with the large cubit-standard and are impossible to place within the excavated building. Had they instead been according to the small cubit-standard, it would have been possible to place them inside the excavated building and they would have corresponded (slightly enlarged) to the Vorhof and Hof provisionally suggested in the unexcavated area on the German plan; of course, only a new excavation could give proof.
25 Da Riva 2013b, 210–211; Weiershäuser – Novotny 2022, Nebuchadnezzar II 11.
in Babylon placed on a foundation platform. The platform was constructed of unbaked mudbrick under the central building and has a volume of 5,560 m³, which corresponds to 427,700 unbaked mudbricks. The walls standing on this foundation had, to the top of the temple, a volume of 76,000 m³, corresponding to 5,800,000 unbaked bricks (the large annex not included). The construction was supported by means of an underground kisû measuring only 1,900 m³, made up of 173,000 baked bricks. The parts of the temple walls that were visible above the surface were 60,536 m³ in volume, corresponding to 4,700,000 unbaked mudbricks. This represents walls far more sizeable than in any other temple found in the city, but the kisû is very small since there has not been any substantial increase in the surrounding elevation compared with other Babylon temples.

There were several other temples connected to the Marduk temple. The first to be discussed is the well-known ziggurat (Section 4.3); then follow a number of other temples attested in cuneiform texts but not excavated (Section 4.4).

4.3 Ziggurat

The ziggurat E-temen-anki (“House, foundation platform of heaven and earth”) was situated in the Eridu area of Babylon, on the west side of the Processional Way between the Marduk temple and the South Palace (UTM 445640E 360040N, Figs. 2.2, 4.1, 4.2, 4.3, 4.4, 6.2). The ziggurat was 91.5 × 91.5 m (8,400 m² or 0.84 ha) in size and 91.5 m high. It stood in a large courtyard surrounded by a precinct or peribolos (German: Zingel). The ziggurat itself took up some 5% of the total area of the courtyard. The modern name of this rather flat area is Sahn (صحن “plate”).

In 1886, Arabs, digging wells, found in the Sahn massive, good-quality baked brick masonry, which they immediately started to remove. They even used water engines (German: Wasserschöpfwerke) to lower the groundwater level in order to get out more bricks. What they took away was the lower, still standing, ca. 15 m-thick baked brick mantel of the ziggurat, resulting in the present deep, often water-filled, cut around the ca. 60 × 60 m unbaked mudbrick core.

The remains of the ziggurat were excavated by R. Koldewey and F. Wetzel in 1913, and the core and later buildings on top of the ziggurat ruin again by H.-J. Schmid in 1962. The large precinct was excavated by Wetzel, mainly in 1908, 1909 and 1910. Some additional upper levels in the south were examined by H. Lenzen and others in 1963–1967 and 1972 (Fig. 4.15) and the eastern façade of the precinct was restudied by Iraqi archaeologists in the 1980s, in connection with excavations at the Processional Way.

4.3.1 The precinct

The precinct measured more than 400 × 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 with projections/pilasters and recesses on the outside of the walls (Figs. 4.3, 4.4, 4.12, 4.13, 4.19, 6.2). The walls show
clear traces of three different construction levels. Each rebuilding started by cutting down the existing walls and then erecting a new, partly changed wall construction on a somewhat higher level. Often the wall projections were moved somewhat, and the wall decoration by means of niches was changed; the niche decorations attested on some levels are often at the corners or doors.

The elevations of the levels differ somewhat between different parts of the long walls and often agree with nearby street or floor levels. Level 1, with its foundation at about −1.0 to +1.0 m, has frequent decoration by means of niches. At the south part of the east wall, a street level is attested at −1.0 m next to the wall. Level 2, at about +2.0 to +3.0 m, has hardly any decorative niches. Level 3, at about +4.0 to 6.0 m, is mostly not preserved, but has limited niche decorations; floors are attested at about +4.0 m. 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 *kisū*, not immediately beside the unbaked mudbrick walls but at a small distance from them. The Level 2 *kisū* has, in the northwest, baked bricks with Nebuchadnezzar stamps. The *kisū* along the Processional Way slopes some metres upward in a northern direction, with a maximum elevation of +6.5 m. (*Fig. 4.13*). At present, all the remains of the unbaked mudbrick walls of the precinct are covered by earth, but they are often possible to follow as ridges in the otherwise flat area (*Fig. 4.12*).26 There is a reference to the precinct (*siḫirtu*) of Etemenanki in a broken passage of an inscription of Nabonidus.27

The German excavations unearthed an altar or a pedestal of baked brick in front of

---

26 Wetzel 1938, 14–30, pls. 6–15 (the large number of elevations on the plans can be read clearly when they are magnified); Schmidt 2002, 290–295, fig. 4.
the larger eastern entrance door to the ziggurat area, at a distance of some 190 m from the precinct wall in the wide street there. The bricks in this structure have inscriptions relating to the construction of the ziggurat Etemenanki, mostly by Esarhaddon (680–669 BC) but once by Assurbanipal (668–627 BC) \(^{28}\) (Fig. 5.14). Iraqi excavations also unearthed the remains of a baked brick structure in front of the smaller eastern entrance door to the ziggurat area, some 10 m from the precinct wall. It is now reconstructed as a well.

4.3.2 The ziggurat
The remains of the ziggurat today (Fig. 4.14) consist of a ca. 60 \(\times\) 60 m core of unbaked mudbrick with the present top about +2.0 to +2.5 m. The foundation of the mudbrick core has not been possible to trace. A 15 m-wide mantel of baked brick with foundation at about −4.0 m surrounded the core. Almost all the baked bricks of the mantel had been taken away by brick miners before excavations started, but in quite limited places there are still some remains standing about 2 m high, to ca. −2 m. The bricks were 32 \(\times\) 32 cm or 31.5 \(\times\) 31.5 cm and had no inscriptions; such bricks were made during the reign of

\(^{28}\) Reuther 1926, 69–71 fig. 59, pl. 18.
Nabopolassar and early years of Nebuchadnezzar.

On the south side, there were three staircases. A middle staircase started 51.6 m from the south side of the ziggurat with the base at −1.3 m. The other staircases were placed along the south side of the ziggurat from the west and from the east. The west one begins 1.9 m west of the tower with a foundation at −3.3 m, where the steps start. The east one probably had similar measurements. The only traces of a brick pavement next to the ziggurat is on the north side at −1.3 m, agreeing with the beginning of the middle staircase in the south (Fig. 6.2).29

There are remains of later Sasanian and Islamic buildings standing on top of the remains of the core from +2 m up to +6 to +9 m, and these were studied in the 1960s (Fig. 4.15). The remains of the Sasanian building have been assumed to be from a large (90 × 90 m) fortification with rounded towers (Section 7.5). The Islamic buildings consisted of well-built private houses.30 Before the last brick mining started in 1886, the baked brick mantel may have been standing to the same height as the core.

Cuneiform texts first refer to Etemenanki as an epithet of the ziggurat in the southern Sumerian city Eridu in the Collection of Sumerian Temple Hymns. References in texts to the ziggurat in Babylon are later, and occur first in the Erra Epic, Tintir, and the

29 Wetzel 1938, pl. 16; Schmid 1995, 55–56, pl. 4.
Creation Epic, Enûma eliš. In *Tintir*, Etemenanki is the name of the ziggurat situated in the city area Eridu in Babylon.\(^1\) The first historical inscription is late, from 689 BC, when Sennacherib, according to his Bavian inscription,\(^2\) tore down the mudbrick and earth (*libitti u eperi*) from the main and front city walls, the temples and the ziggurat, and threw it into the river. In Sennacherib’s time, the main and front city walls and the temples were of unbaked mudbrick, but does this also imply that there was no baked brick mantel of the ziggurat at that period?  

The first reference in royal inscriptions to Etemenanki as the ziggurat of Babylon is in the account of the rebuilding of the ziggurat Etemenanki by Esarhaddon (680–669 BC).\(^3\) He gives both the length and width of the building as one *ašlu* (ca. 60 m) and one *şuppān* (half an *ašlu*) which is a total of about 90 m, something that agrees with all sources from this time on. Assurbanipal continued the work on the ziggurat.\(^4\)

Nabopolassar (625–605 BC) claims the ziggurat Etemenanki was near collapse. He had numerous unbaked mudbricks (*libittu*) and baked bricks (*agurru*) prepared and

---

\(^1\) George 1992, 58–59, 298–300.

\(^2\) Grayson – Novotny 2014, 316 Sennacherib 223.


\(^4\) Weissbach 1938, 39–40; Frame 1995, 208–212 Ashurbanipal B.6.32.7–B.6.32.11.
reconstructed the building.\footnote{Da Riva 2013a, 42–43, 77–92; Weiershäuser – Novotny 2022, Nabopolassar 6, 13.} Nebuchadnezzar II (604–562 BC), the son of Nabopolassar, explains that his father raised the four walls of the lower mantel of the ziggurat only to a height of 30 ammatu, or 15 m, with baked bricks and asphalt ($i$-$ga$-$ru$-$ša$ $er$-$bi$-$it$-$ti$ $a$-$na$ $ki$-$da$-$a$-$nim$ $i$-$na$ $kupri$ $ù$ $agurri$ $30$ KÙŠ $ú$-$za$-$aq$-$qi$-$ir$).

Nebuchadnezzar completed the ziggurat to the top in baked brick, using a workforce drawn from various parts of his large empire. He filled its foundation 15 m as a high terrace ($i$-$ši$-$id$-$su$ $30$ KÙŠ $ta$-$am$-$la$-$a$ $za$-$aq$-$ri$-$im$ $ù$-$ma$-$al$-$li$) and reinforced the structure with massive cedar and large rosewood beams (GIŠ.ERIN.MEŠ $pa$-$ag$-$lu$-$tim$ GIŠ.MES. MÁ.GAN.NA $ra$-$bi$-$ù$-$tim$). This probably means that he added another 15 m to the 15 m his father built, and not that he replaced his father’s work with his own. The result would be a low platform of about 30 m. This height was probably measured from the base of the foundations, as normal in contemporary royal inscriptions, and not from the changing level of the ground surface; this may mean from $−4.0$ m to $+26.0$ m, or a bit higher if any of the staircases were used for this purpose instead.\footnote{Weissbach 1938, 46–47; Beaulieu 2005, 49; Weiershäuser – Novotny 2022, Nebuchadnezzar II 27. Same text as, but more complete than, Langdon 1912, 144–149 Nebukadnezar 17.}

The further history of the ziggurat cannot be firmly established purely on the basis of contemporary inscriptions, as so few have been found. It has been debated whether Xerxes I (485–465 BC) at least partly destroyed the tower in connection with the crushing of a revolt, as part of the classical tradition seems to say.\footnote{San Nicolò 1934; Kuhrt – Sherwin-White 1987; Rollinger 1993; Waerzegger 2003–2004; van der Spek 2006, 266–275; Waerzegger 2018 and other articles in Waerzegger – Seire 2018.} An argument for a partial destruction of the tower by an Achaemenid ruler is the clay cylinder with a description of the construction of Etemenanki found in Susa.\footnote{Weissbach 1938, 44–48; George 2005–2006, 89–90; George 2010.} It was probably originally deposited in the brickwork of the ziggurat in Babylon, and after demolition of the masonry transferred to Susa. Alexander III (331–323 BC), or successors of his such as Antiochus I (281–261 BC) when he was crown prince, removed debris from Esagil (possibly including Etemenanki), in preparation for rebuilding it.\footnote{Finkel – van der Spek – Pirngruber 2020, BCHP 4, 6. Alternatively, this is just regular maintenance.} At some point all the upper parts of the ziggurat were removed and a lot of the debris transferred to what is now called the Homera hill in the northeast corner of the inner city of Babylon, where a Greek theatre was constructed on part of the fill (Section 7.2).\footnote{Wetzel – Schmidt – Mallwitz 1957, 2–22.} The planned rebuilding of the ziggurat does not seem to have occurred. On top of the remains of the still-standing base of the ziggurat, the Sasanian fortress and later on private houses were built (see Section 7.5, Fig. 4.15).

Owing to a dearth of other evidence, the so-called Esagil tablet referred to above (Section 4.2), a later mathematical school tablet giving the measurements of Etemenanki,
has been the main source for numerous different reconstructions of the upper, now missing parts, of the ziggurat in Babylon. The sides of the base and the height are all given as 3 ṣuppān = 15 nindanu, corresponding to 180 ammatu, or about 90 m. The last section giving details of the height is problematic, with one missing text row, and the stated heights of the platforms partly disagree with other evidence. The question is, did the second level of the ziggurat from the base have three times the height of the following four levels, as the text says? Or did all levels have the same height, as the evidence discussed below seems to suggest?41 The history of research has been summarised by H. Schmid, with new details from his own excavation.42

A partially preserved clay tablet has a one line inscription, “Ziggurat of Marduk”,

---

42 Schmid 1995.
and depicts below the inscription the remains of a plan with six preserved platforms (a possible seventh in the centre is broken away). All platforms except the lowest and highest have the same height, and therefore disagree with the Esagil tablet. On the back of the tablet, there is an even more fragmentary plan of a ziggurat but without any preserved inscription; possibly it was the Borsippa ziggurat.43

A stone stele depicts king Nebuchadnezzar standing in front of the façade of a ziggurat. A plan is shown above it with another plan at the left edge of the stele (Fig. 4.16). An epigraph beside the ziggurat explains that what is depicted is Etemenanki, the ziggurat in Babylon ([É]-temen-an-ki [zi]-qu-ra-at [k]á.ningir.ra[ki]). The lower part of the stele has a long inscription of Nebuchadnezzar about the construction of the ziggurats in Babylon and Borsippa. It was reasonably suggested in the publication that the plan above the ziggurat shows the top building on the Babylon ziggurat, and the plan on the edge the same for the Borsippa ziggurat.44

The much better-preserved ziggurat Eurmeiminanki (“House which gathers the seven me’s of heaven and earth”) in Borsippa can be used as a comparison in order better to understand Etemenanki in Babylon. The two ziggurats are very often mentioned together, almost as one project, by Nebuchadnezzar. The lower parts of both ziggurats consist of a 60 × 60 m core of unbaked mudbrick with a surrounding mantel of baked brick: the mantel’s thickness in Babylon is 15 m, but remains to be established in Borsippa. This makes the ziggurat in Babylon 90 × 90 m; whether it was the same size in Borsippa has yet to be confirmed, but this is a good possibility given the similar size of the core. Nebuchadnezzar wrote that the Borsippa ziggurat built by an earlier king, not mentioned by name, had not been completed to the top but was standing 42 ammatu, or 21 m, high and was in disrepair.45 This corresponds to the mudbrick core the Austrian excavators called Core I (German: Kern I) and the surrounding baked brick Mantel I (Fig. 4.17).46 For the Babylon ziggurat, Nebuchadnezzar wrote that his father Nabopolassar had started a reconstruction but that the building was only 30 ammatu, or 15 m, high and that the top was missing.47 This agrees with the sizes of the bricks: the upper part of the Borsippa ziggurat has 33 × 33 cm Nebuchadnezzar bricks, and the lower part of the Babylon ziggurat has (as recorded above) 32 × 32 cm or smaller bricks, typically Nabopolassar’s size, and not stamped; but the lower part of the Borsippa ziggurat has 36 × 36 cm unstamped bricks, which may date to Assurbanipal or earlier.

---

43 Jakob-Rost 1984.
44 George 2011, 153–169, pls. 58–67, MS 2060, Schøyen collection, Oslo – London. Wei-ershäuser – Novotny 2022, Nebuchadnezzar II 1. Different, contradictory versions of its origin have been published. Iraqi claims that there may be a connection with local peoples’ excavations in the Amran area are being studied.
45 Langdon 1912, 98 Nebukadnezzar 11; George 2011, 169 D.
47 Langdon 1912, 146–147, 152–153 Nebukadnezzar 17, 19; Da Riva 2012, 45; Weiershäuser – Novotny 2022, Nebuchadnezzar II 27.
Whereas all sources agree about the total size of the ziggurat in Babylon, the form of the ziggurat on the stele agrees with the abovementioned plan on the clay tablet but disagrees partly with what is written on the Esagil tablet, especially concerning the height and width of the second-lowest platform (and as a result, the height of all platforms). On the other hand, with a small adjustment of the excavator’s interpretation of the border between the upper and lower construction at the Borsippa ziggurat, there is agreement between the stele and the ruins of the Borsippa tower. This adjustment would require that all baked brick constructions on the top of the mudbrick core and the brick mantel are counted as part of the upper building. Then the lower terrace consists of Core 1 and 2 with Mantel 1 and 2, the second terrace is the connecting construction (German: Verbindungsbau) and Area A (Bereich A), the third terrace is Area B, the fourth terrace is Area C, and so on for the upper, not preserved parts. Between every two terraces, there was an adjustment layer (Ausgleichschicht) (Fig. 4.17). Different types of adjustment layers can be found in many different buildings in Babylon.

The Austrian study of the Borsippa ziggurat has explained several aspects of the construction technique that should be directly applicable to the Babylon ziggurat. Bricks were laid in one layer over the whole building, both unbaked mudbrick and baked brick,

---

48 George 2011, 154–157 fig. 1.
49 Allinger-Csollich 1991, 388–389, fig. 1, treated instead the connecting construction as the top of the lower terrace.
followed by the next layer over the whole building. Different forms of reinforcement were used: reed layers, reed wire anchoring, and wooden beams, especially in the connecting construction of baked brick above the mudbrick core and baked brick mantel.50

According to his inscriptions, Nebuchadnezzar built the shrine (kiṣṣu) at the top (rēšu) of the ziggurat in Babylon with blue-glazed brick, as in Borsippa.51 Again, the better-preserved ruin of the Borsippa ziggurat provides more evidence. Here, thousands of fragments of blue-glazed bricks were found. There were also glazed brick fragments with traces of white cuneiform, as at the Ištar Gate in Babylon. No fragments of such glazed bricks have been found at the site in Babylon, which was cleaned as a preparation for a rebuilding (Figs. 4.18, 4.19, 5.14).52

In the digital model, the staircases have been positioned according to the excavated remains in Babylon and the picture of the ziggurat on the stele. The two side staircases go up to the top of the first terrace, as suggested by their gradient and also the marking on the stele. The staircase in the middle of the frontage can be interpreted in different

50 Allinger-Csollich 1991.
52 Allinger-Csollich 2013, 16.
ways. The gradient angle of the remains would allow the staircase to reach not only the first terrace, but also higher levels; however, the stele does not show any middle staircase above the first terrace. The staircases for the upper terraces seem to have been inside the brick structure of the ziggurat, but their exact positions are not known (Figs. 4.16, 4.18, 4.19, 5.14).

At the top of the ziggurat, the stele depicts a building of monumental height, with a central courtyard surrounded by rooms and with a main cella to the west; the Esagil tablet calls it east in accordance with regular nomenclature, as the door opening is in the east wall of the room. The Esagil tablet refers to a staircase (bīt simmilti) inside the upper building. This may have come from below as the entrance, or gone up to a higher level or the roof, or possibly in both directions.

The relation between the ziggurat and the precinct involves some limitations and

---

questions. So little has been excavated and preserved that some questions can be given only preliminary answers. The terrain had a natural slope towards the southeast, and the preservation in the southeast is worse than in most other areas. The heavy ziggurat has, over time, probably compressed the ground, but to what extent has not been studied. From an engineering point of view, a fairly flat area may be preferable for a major building, but that may not have been the ancients’ opinion. The possibility that the ziggurat had a lower position and sometimes actually stood in water – i.e. had an ideological connection to *apsû* – has never been seriously considered, but always treated as impossible.\(^5\)

In the following, there will be an attempt to look at the main levels of the precinct and relate them as far as possible to the ziggurat, with the assumption that it was built on a fairly flat surface.

The precinct Level 1 with elevation from −1 m to +1 m may have a good connection to a ziggurat elevation of the middle staircase with a foundation at −1.3 m. The bricks of the lower preserved parts of the ziggurat have the size of Nabopolassar, and he was probably also the creator of the lowest attested precinct. As noted above, the Level 2 precinct at +2 m to +3 m had remains of a *kisû* with Nebuchadnezzar inscriptions. This would correspond to the ziggurat of Nebuchadnezzar, who for his first terrace added some 15 m height to the 15 m first terrace of Nabopolassar; this would correspond to some 28 m according to the drawing on the stele. An explanation may be that some of the top of Nabopolassar’s construction, having been open to the weather, had to be replaced. An alternative explanation may be that the height of the ziggurat was calculated from a higher pavement level, perhaps +2 m, and not from the foundation, as was usually done. Such a level would agree with a Nebuchadnezzar level of the precinct and the surrounding streets, at least for the early years of Nebuchadnezzar. Level 3 of the precinct, from +4 m to +6 m, is higher than most of the final Processional Way in the middle and southern parts, at +3 m, but would agree with a possible Nebuchadnezzar street level in the northeast of the precinct. Level 3 could, therefore, either be late Nebuchadnezzar or slightly later (Fig. 4.19).

### 4.3.3 Amounts of building materials for the ziggurat

The quantities of the main building materials have been extracted from the digital model of Babylon by means of the ArchiCAD program used for the construction of the model. The following listing gives the total numbers of unbaked mudbricks and baked bricks, as well as the volumes of mud mortar and bitumen mortar, in the ziggurat at the end of Nabopolassar’s reign and then at the end of Nebuchadnezzar’s. In order to get an idea of the size of the ziggurat, we can compare these totals with those of another large construction in Babylon during the same period: the city walls. During the reign of Nabopolassar, and including older remains, the ziggurat consisted only of a 15 m-high platform, ca. 90 × 90 m, with a core of unbaked mudbrick and a surrounding mantel of baked brick. Nebuchadnezzar completed the upper platforms, resulting in

---

\(^5\) Schmidt 2002, 290–295, fig. 4.
the well-known, ca. 90 m-high building. People from all over the empire contributed to the ziggurat. The stele from Babylon,\textsuperscript{55} and additional information from the Esagil tablet,\textsuperscript{56} have been used here for the digital reconstruction of the heights of the parts of the ziggurat.

<table>
<thead>
<tr>
<th>Ziggurat, Nabopolassar and earlier</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mudbrick core</td>
<td>57,000 m(^3)</td>
<td>4,400,000 mudbricks</td>
</tr>
<tr>
<td>Brick mantel</td>
<td>68,000 m(^3)</td>
<td>6,200,000 baked bricks</td>
</tr>
<tr>
<td>Mud mortar (10% of wall volume)</td>
<td>5,700 m(^3)</td>
<td></td>
</tr>
<tr>
<td>Bitumen mortar (10% of wall volume)</td>
<td>6,800 m(^3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ziggurat, end of Nebuchadnezzar</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mudbrick core</td>
<td>113,000 m(^3)</td>
<td>8,700,000 mudbricks</td>
</tr>
<tr>
<td>Brick mantel, upper levels, staircases</td>
<td>332,000 m(^3)</td>
<td>30,200,000 baked bricks</td>
</tr>
<tr>
<td>Mud mortar (10% of wall volume)</td>
<td>11,300 m(^3)</td>
<td></td>
</tr>
<tr>
<td>Bitumen mortar (10% of wall volume)</td>
<td>33,200 m(^3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ziggurat, added during Nebuchadnezzar</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mudbrick core, upper part</td>
<td>56,000 m(^3)</td>
<td>4,300,000 unbaked bricks</td>
</tr>
<tr>
<td>Brick upper levels, staircases</td>
<td>264,000 m(^3)</td>
<td>24,000,000 baked bricks</td>
</tr>
<tr>
<td>New mud mortar (10% of wall volume)</td>
<td>5,600 m(^3)</td>
<td></td>
</tr>
<tr>
<td>New bitumen mortar (10% of wall volume)</td>
<td>26,400 m(^3)</td>
<td></td>
</tr>
</tbody>
</table>

Total ziggurat: 38,900,000 bricks of all sorts, at the end of Nebuchadnezzar’s reign
Total ziggurat: 28,300,000 new bricks of all sorts added during Nebuchadnezzar’s reign

This total number of bricks for the ziggurat can be compared with the total number of bricks for the city walls at the end of the reigns of Nebuchadnezzar and Nabonidus (as calculated in Section 2.7): that is, 594,100,000 bricks of all sorts for all types of city walls (including the external protective palace walls). Excluding the external palace walls, the number is 484,600,000 bricks of all sorts.

This means that the total number of all bricks for the ziggurat was just 6.6\% of those for the city walls (including walls around palaces) standing at the end of the reign of Nebuchadnezzar and Nabonidus; or 8.2\% of the city walls with the narrower definition (excluding walls around palaces).

In terms of the amount of building material, the large ziggurat was much smaller than the enormous city walls, with their extent of many kilometres. The building materials used for the city walls in Babylon are enough to construct about 14 ziggurats of the size of the attested one at the Marduk temple. With the numbers and definitions of city walls above we get 15 or 12 ziggurats depending on if external palace walls are included or not.

---

\textsuperscript{55} George 2011, No. 76.

\textsuperscript{56} George 1992, No. 13.
4.4 Other temples in the Eridu area according to cuneiform texts

The surroundings of Esagil, in the Eridu area of the city of Babylon, have never been archaeologically examined but, according to cuneiform texts, there existed a series of 12 other temples, possibly within a large precinct. Even if the existence of such a precinct surrounding a larger Esagil complex has not been verified, its existence is probable and a section of its northern wall along the main west–east street may have been unearthed, but the date remain to be clarified (Figs. 4.11, 4.19, 5.7, 6.2).57

In the following, the information from cuneiform texts about unexcavated temples in the Eridu area will be summarised according to the listing in the Tintir tablet 4, after the Marduk temple Esagil and the ziggurat Etemenanki (Fig. 4.2).58

The Gate of Apsû was the Ea temple named E-kar-zaginna (“House of the embankment of lapis lazuli”). According to Tintir it should be situated in the Esagil complex, on the river bank, with gardens. It was rebuilt by Assurbanipal and was given a new throne by Nabonidus. Another temple of Ea was in Kumar in west Babylon.

The god Madānu had the temple E-rab-riri (“House of the shackle which holds in check”) in the Esagil complex. The temple survived into the Parthian period in 94 BC, when it was repaired, as shown by the Raḥimesu archive.59

The temple for the goddess Gula, named Egal-maḥ (“Exalted palace”), was situated next to the previous one. It was probably the same as the Ninkarrak temple E-ḫursag-sikilla (“House, pure mountain”), which was built in Old Babylonian times by Sumu-abum.60 It was one of a small group of temples rebuilt with asphalt and baked brick by Nebuchadnezzar.61 In a later period, it had a juniper garden. The temple survived into the Parthian period, about 90 BC, as is clear from the Raḥimesu archive and related texts.62

Another temple of Gula was in Tuba in west Babylon.

The god Amurru had the temple E-namtagga-duḫa (“House which dispels guilt”). Esarhaddon renewed the cult-statue of the god. Another temple of Amurru stood in Kumar in west Babylon.

The god Adad had the temple E-al-tila (“House of the lifegiving mattock”). Another temple of Adad stood in Kumar in west Babylon.

The goddess Bēlet-Bābili (Ištar of Babylon) had a temple E-tur-kalamma (“House, cattle-pen of the land”) with a long recorded history. In Old Babylonian times, it was rebuilt by Apil-Sîn in year 13, and Hammurapi in years 14, 34; Samsuiluna in year 8 gave

57 Possibly the north wall founded at +2.0 m in Wetzel – Schmidt – Mallwitz 1957, 31, pl. 15; the scale on that plan should be corrected: 15 m should be 30 m.
58 For more details, see George 1992, 58–59, 300–310; George 1993.
59 van der Spek 1998, 220 No. 10.
it a platform in silver.\textsuperscript{63} The temple was later rebuilt by Assurbanipal and Nabonidus. In 325 BC, a garden separated the temple from Esagil. The temple survived into the Parthian period about 90 BC, as is clear from the Raḫimesu archive.\textsuperscript{64} Other Ištar temples were situated in Kadingirra, New Town and Kullab in east Babylon, as well as in Bāb-Lugalirra and Tuba in west Babylon.

The temple of the moon god Śīn, named E-nitenna (“House of rest”) or E-nitendu (“House of pleasant rest”), goes back to the Old Babylonian period. Ammiditana year 30 records a statue, Ammišaduqa year 17 construction, and Samsu-ditana year 10 a statue, as well as year 13 a throne.\textsuperscript{65} The temple was still in use in around 281 BC, or just before, when Antiochus I as crown prince entered the temple.\textsuperscript{66} Another temple of Śīn stood in Kullab in east Babylon.

The god \textit{Papsukkal} had the temple E-sagdil-anna-gidru-tuku (“House of the heavenly secrets, holding a sceptre”) in Eridu.

The god \textit{Dumuzi} of Captivity (\textit{ša kimētu}) had a temple E-zida-gišnu-gal (“True house of great light”) in the area.

The god \textit{Nabû} of Accounting (\textit{ša nikassi}) had a temple E-gišla-anki (“House of the auditor of heaven and earth”) in the area. Other temples of \textit{Nabû} were situated in Kadingirra and New Town in east Babylon, as well as in Tuba in west Babylon.

The temple of the goddess \textit{Ningišzida}, called E-guzala-maḫ (“House of the exalted chamberlain”), was situated in Eridu.

The temple of the goddess \textit{Anūnîtum}, named E-sagga-šarra (“Foremost house in the universe”), was, like all the above, situated in the Esagil complex in the area of Eridu in the city of Babylon.

\textbf{4.5 Nabû temple}

The temple for the god of writing \textit{Nabû ša ḫarê} (“Nabû of storage”) was called E-niggidru-kalamma-summa (“House which bestows the sceptre of the land”). It was situated on the west side of the Processional Way between the South Palace (\textit{Südburg}) and the ziggurat area in the Kadingirra city area of Babylon, in the part that is called Sahn in modern times (UTM \textit{445860E 360410N, Figs. 2.2, 4.2, 6.2, 6.9}). The long name, Nabû of the ḫarû, is used to distinguish it from two other Nabû temples, one in the Esagil complex in Eridu in east Babylon and one in Tuba in west Babylon.\textsuperscript{67} The 1,080 m\textsuperscript{2} temple was excavated and partly reconstructed in 1979–1981 by an Iraqi team supervised by Danial Ishaq (\textit{Fig. 4.20}). Thanks to a raised floor level (by ca. 4 m) with infilling that protected the old walls, the excavators found rather well-preserved white lime-gypsum wall plaster with geometric decoration in black bitumen, and a large number of cuneiform school

\begin{thebibliography}
\item 63 Sigrist – Damerow 2001.
\item 64 Sachs – Hunger 1988, 190–191; van der Spek 1998, Nos. 8, 15, 18, 31.
\item 65 Sigrist – Damerow 2001.
\item 66 Finkel – van der Spek – Pirngruber 2020, BCHP 5.
\item 67 George 1992, 58–59, 310–312.
\end{thebibliography}
The vaulted tops of the doors seen in all reconstructions are not attested for the temple but applied in analogy with similar doors elsewhere in Babylon.\(^{68}\)

The foundations of the preserved temple were laid at +3.0 m. Two main levels were reported archaeologically and expected according to inscriptions. The far better-preserved level +3.8 m is the Esarhaddon temple in unbaked mudbrick. 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, 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. The upper temple was built with baked brick, not unbaked mudbrick (Figs. 4.23, 4.27). This exception to a long tradition of temple building in Mesopotamia is clear both from the small remains of walls on this upper level and from Nebuchadnezzar’s inscriptions recording the construction. As might be expected, most of the baked brick walls of the rebuilding, including the upper parts of the *kisû*, were taken away by brick miners.\(^{69}\)

There were two cellas in the temple, each to 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 with the Nabû cella was 14.8 × 8.7 m or 130 m\(^2\). The cella was 54 m\(^2\) and 4.9 m wide. The other courtyard was 9.1 × 6.6 m or 60 m\(^2\). The cella was 20 m\(^2\) and 3.0 m wide. The courtyard in front of the Nabû cella, as well as the cella itself and some other rooms nearby, had white walls with bands and other geometric decorations of black bitumen (Figs. 4.23, 4.24, 4.25). The same


Fig. 4.21. Full-scale reconstructions seen from the east: Nabû temple (the large building), Ašratum temple (in the foreground), and a private house. The Processional Way is in front of the small temple. Photo: SBAH, WMF, March 2017.

Fig. 4.22. Nabû temple. Eastern façade of the modern reconstruction beside the Processional Way. Esarhaddon’s temple, with mud-plastered mudbrick walls and entrance with nched towers. The mostly reconstructed, baked brick kisû belongs to the later Nebuchadnezzar temple. Photo: Pedersén, October 2015.
white walls with black decorations could be found in the other cella, but the main wall in the courtyard in front of the goddess’s cella was all black with bitumen (Fig. 4.26). The thickness of the walls is only 1.8 m, but owing to the baked brick construction of the upper level the digital model assumes a maximum height of 9.0 m on that level. There were the usual towers beside the main entrance to the temple, but not on the courtyard walls in front of the entrances to the cellas, where the walls were flat, with black decoration.

Cuneiform historical texts mention the temple from around 1000 BC, in the Religious chronicle, until 538 BC, when the crown prince Cambyses (later king Cambyses II), son of Cyrus II, visited the temple during the New Year festival.70 The Astronomical Diaries report fighting in the area of the temple in the year 78 BC.71 According to an inscribed cylinder found inside the wall at the back of the cella, after 672 BC Esarhaddon (680–669 BC) rebuilt the temple with unbaked mudbrick (libittu), following the old measurements he found through excavation of its old ruins.72 Nebuchadnezzar says he rebuilt the temple with asphalt and baked bricks (agurru).73

---

70 Grayson 1975, 111 Chronicle 7, 135 Chronicle 17.
73 Cavigneaux 1981a; Langdon 1912, 128–129; Nebukadnezar 15; Da Riva 2012, 54–55; Weiershäuser – Novotny 2022, Nebuchadnezzar II 2.
Fig. 4.24. Main courtyard of Nabû temple, looking southwest. To the left, behind the altars, is the door to the cella of Nabû. White lime-gypsum plaster with black bitumen decoration on the walls, and floor of bricks covered with asphalt. Model: Pedersén.

Fig. 4.25. Main courtyard of reconstructed Nabû temple. Under the blue marking is the Esarhaddon temple in unbaked mudbrick; the upper part is the Nebuchadnezzar baked brick temple or modern reconstruction. Modern white plaster with black bitumen decoration. Photo: Pedersén, October 2015.
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. On the top of the mudbrick walls is the lowest part of Nebuchadnezzar’s baked brick walls. The walls have been completed upwards with modern material and covered with a roof in ancient style; the baked brick kisû has 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 has been completed on the reconstructed walls (Figs. 4.20, 4.22, 4.25, 4.26).

In front of the main entrance to the temple is a double altar originally of unbaked mudbrick, now reconstructed in baked brick. A similar construction with a double altar can also be found at the main entrance door at the Ninurta temple (Figs. 4.20, 4.21, 4.22, 4.26, 4.50, 4.51, 4.52). A few metres from the northeast corner of the temple, a pedestal was excavated and is now reconstructed. A similar construction was found during the German excavations in the Merkes area in the street crossing between “Ostweg” and “Altarstrasse” (Figs. 4.20, 4.21, 5.39 coordinates Merkes 31r; 6.9 markers 1 and 2).
4.5 Nabû temple

Fig. 4.27. Model: Development of the Nabû temple. Model: Pedersen.
More than 1,500 clay tablets were unearthed above the lowest floor in the infilling that was put in when the floor was raised in connection with Nebuchadnezzar’s rebuilding of the temple. Most tablets were found in two rooms in the northwest corner of the temple. They are school tablets, written by students and deposited in this temple of Nabû, the god of writing.\(^{74}\)

### 4.6 Ištar temple

The temple for the goddess of war and love, 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 Processional Way in the Kadingirra area, in the section now called Merkes (مرکز, “centre”), some 90 m east of the Nabû temple (UTM 44
5980E 3600460E, Figs. 2.2, 4.2, 6.2, 6.9). 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; one in Kullab in East Babylon; as well as one in Bāb-Lugalirra and one in Tuba in west Babylon.\(^{75}\)

Oscar Reuther excavated the 1,150 m\(^2\) temple in Kadingirra in 1910–1911 (Figs. 4.28, 4.29, 4.30, 5.9).\(^{76}\) Additional excavations and a reconstruction of the deepest level were undertaken by Iraqi archaeologists in the years around 1980.\(^{77}\) Like the Nabû temple, the Ištar temple had the level of the floor raised, by almost 2 m, which resulted in the

---

\(^{74}\) Cavigneaux 1981b; Cavigneaux 2013.

\(^{75}\) George 1992, 58–59, 312.

\(^{76}\) Reuther 1926, 123–147.

\(^{77}\) Nasir 1979a; Al-Suba’ai 1985.
4.6 Ištar temple

Fig. 4.29. Plan of Ištar temple. German excavations. Lower level. Cella to the west. Reuther 1926, pl. 29.

Fig. 4.30. Plan of Ištar temple. German excavations. Upper level. Changes from lower level marked thus: doors (red), pilasters (orange). A kisû added around the temple. Reuther 1926, pl. 30.

Fig. 4.31. Ištar temple. German west–east section. Three floor levels, +5.3 m (green), +7.0 m (orange), and +8.0 m (yellow). The red line is the level used for the Iraqi reconstruction, +5.3 m. Reuther 1926, pl. 33b.
preservation of the wall plaster on the infilled lower part of the walls. The white plaster had black decoration of geometric forms in bitumen paint, like the Nabû temple, and the wall of the courtyard in front of the cella and the niche in the cella were black (Figs. 4.33, 4.35). 78

The German excavation exposed three levels with unbaked mudbrick walls, each level cut and rebuilt with (more or less certainly) corresponding floors (Levels 1, 2, 4). In addition, there is one Level 3 with clear marking of a floor level on the walls.

Level 1, the first structure, had the foundation at +4.0 m but lacks any preserved remains of the floor (Fig. 4.29). The excavators assumed that the floor would have been at the top of the preserved wall remains, +5.2 m, which is about the same as the floor of the next level.

The walls were cut down to +5.2 m and the temple was completely rebuilt in Level 2 with a floor at about +5.3 m (Fig. 4.30). Later, there was a heavy infilling up to about +7.0 m; the floor of Level 3 is not preserved. This infilling preserved the white plaster, which in some rooms had a black bitumen decoration. As already noted, the courtyard wall in front of the cella and the niche in the cella were bitumen black overall, as were the door openings in that direction (Figs. 4.33, 4.35, 4.37). The wall of Level 3 had no

78 Reuther 1926, 123–147, esp. 130–131.
preserved plaster at all (Fig. 4.33). This was followed by a second cutting down of the walls and rebuilding with a floor of Level 4 at +8.0 m (Fig. 4.30). The upper Level 4 was connected with a surrounding kisû of baked brick with a foundation at +6.5 m (Figs. 4.31, 4.32). The upper level was destroyed by fire, leaving charcoal remains of the roof, which had consisted of palm balks, reed mats, and brushwood covered with earth. The thickness of the walls is 2.4 m and the assumed maximum height of the walls in the digital model is 9.0 m. The central courtyard was 12 × 12 m, or 144 m², in area. The ante-cella (17) and the cella (18) were both about 55 m² and 3.2 m deep.\footnote{Reuther 1926, 124.}

The reconstructed Ištar temple now standing in Babylon has the floor at approximately the lowest exposed ancient floor level, about +5.3 m. The lower parts of exposed walls in the reconstruction have an original mudbrick core, but the mudbrick façades were in bad condition and were replaced by new ones.\footnote{Nasir 1979a; Al-Suba’ai 1985.} All the higher parts of the walls are modern, in a style that follows the German excavators’ interpretations. This can be exemplified by the repair work done on the reconstruction in 2019, which opened up the old original mudbrick core inside the modern mudbrick façade. The upper parts of the reconstructed

\[Fig. 4.33. Ištar temple. Room north of the cella, looking west, with black bitumen decoration on white wall, preserved owing to infilling when the floor was raised. Three floor levels, +5.3 m (green), +7.0 m (orange), and +8.0 m (yellow) Photo: Buddensieg, April 1911. (Bab Ph 2349, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).\]
walls are of modern baked brick. All walls, both of mudbrick and of baked brick, have been covered with the same mud plaster, giving them all the same old look. We have, therefore, basically an old structure; but all surfaces that can be seen are modern and the original white colour on the walls with black decoration has not been restored (Figs. 4.35, 4.37).
4.6 Ištar temple

Fig. 4.36. Ištar temple. Iraqi reconstruction, looking east. The towers before the cella entrance lack their upper parts owing to a collapse. Photo: SBAH, WMF, March 2017.

Fig. 4.37. Ištar temple, upper level, looking east. Walls of unbaked mudbrick with white lime-gypsum plaster. The wall in front of the cella has plaster covered by black bitumen. Walls in some rooms have white lime-gypsum plaster with black bitumen bands. Floor of bricks covered with asphalt. Model: Pedersén.
In the street in front of the entrance door at Level 3, an altar stood. At the next Level 4, it was covered by brick pavement. Another altar or pedestal at the southwest corner of the temple in the street crossing has been reconstructed, but the dating of the structure is not clear (Figs. 6.2, 6.9 markings 4 and 5).

The dating is not without problems. The walls have mudbricks of sizes almost identical to those of the Neo-Babylonian period. The two lowest floors have hardly any traces of the bricks remaining, and the upper (double) floor consists of Nebuchadnezzar bricks. The upper wall was related to three Nabonidus cylinders; two of them were found in situ inside the wall at approximate floor level or just below. The German excavators considered the first level possibly to be early Nebuchadnezzar (partly because of the better construction of the wall), and the two higher to be Nabonidus. The Iraqi excavators took the first as Nabopolassar, the second Nebuchadnezzar, and the third Nabonidus: on what grounds is not known. What is of interest here is the very clear cutting off of the first mudbrick building to the new floor level and the rebuilding of the walls of Level 2 in (in some cases) somewhat relocated positions. The walls of Level 2 seem also to have been cut down, with some repositioning of the walls for Level 4, but there is hardly any floor left (Fig. 4.32). According to the German excavators, the final fire that destroyed the temple occurred in the Achaemenid period. The dating comes from clay tablets in the destruction layer, with the latest tablet dating from year 15 of Darius I (507 BC).

The German excavators unearthed a number of clay tablets in the temple, most of them in the courtyard. There were a number of administrative documents and some religious texts, including a copy of Tintir, already referred to several times.

4.7 Ašratum temple
The temple of the goddess Ašratum, called E-ḫili-kalamma (“House of the luxuriance of the land”), was situated on the west side of the Processional Way between the Way and the Nabû temple in the Kadingirra area, in the part called Sahn in modern times (UTM 45880E, 3600400N, Figs. 4.2, 4.38, 6.2, 6.9). It was excavated and partly reconstructed in 1979–1981 by an Iraqi team supervised by Danial Ishaq. The building, which is smaller than other excavated temples in Babylon, just some 260 m², has the pilasters on the external walls that are typical of religious buildings, but lacks the usual protruding towers flanking the main door. South of the inner courtyard was a room adorned as a cella with the typical niche. In the temple, the excavators unearthed the same type of clay tablets with student exercises as in the nearby Nabû temple.

The identification of the goddess of the temple was based on circumstantial evidence. It was the only temple in Kadingirra without a secure name and, according to the

84 Cavigneaux 2013.
Tintir text, the goddess Ašratum should have a temple here. However, there may be a stratigraphic problem with the excavation results, which have not yet been published in detail. Preliminary information seems to indicate that the temple existed on a level at about +6 m, between the two main Nabû temple levels discussed above; an alternative possible explanation is that this structure was a temporary Nabû temple during the major reconstruction and elevation of the main temple.

4.8 Ninmaḫ temple
The temple for the mother goddess Ninmaḫ, also called Bēlet ili, was named E-maḫ (“Exalted house”). It was situated in the palace area Kadingirra on the east side of the Processional Way next to the Istar Gate and the inner city wall (UTM 445850E 3600800N, Figs. 2.2, 4.2, 6.2). The first recorded excavation of a few rooms of the temple was undertaken in 1880 by Hormuzd Rassam, who wrongly treated it as part of the royal palace. Robert Koldewey excavated the 1,750 m² temple in 1900, establishing the plan; he used excavated cuneiform texts to secure the identification of the building as the Ninmaḫ temple (Figs. 4.39, 5.24). The central courtyard was 14 × 20.4 m or 288 m². The antecella was 58 m² and 4.6 m wide and the cella was 51 m² and 4.1 m wide. Additional deeper excavations and a reconstruction of a deeper level by Iraqi archaeologists followed in 1961–1962.

---

86 Cavigneaux 1981a, 123.
88 Koldewey 1911, 4–17, pl. 2–3.
89 Baqir 1961, 7; 1962, 6.
The excavated temple stands on several metres of clay and sand layers. The outer walls of the temple were founded at +3.5 m and the inner walls at +4.5 m, which is several metres higher than such other nearby structures as the Ištar Gate and the South Palace. If there was a floor just above the foundation, tentatively here called Level 0, as may be assumed from a capsule below the cella, nothing has been preserved of it in the small excavated area. The first documented floor, Level 1, was found by the German excavations in the form of a preserved platform in the cella at about +7.0 m. A second floor, Level 2, was attested by another platform in the cella at about +8.0 m. The Iraqi

Fig. 4.39. Plan of Ninmah temple. German excavation. Cella (C.) to the approximate south. W. Andrae 1902 in Koldewey 1911, pl. 3.

Fig. 4.40. Ninmah temple. German north–south section. To the left: three floor levels (dark blue, light blue, yellow). To the right: two additional, deeper floor levels in the cella (orange, violet). The green line at +9.0 m is the level used for the Iraqi reconstruction after deeper excavation. Andrae 1902 in Koldewey 1911, pl. 3.
excavations exposed more remains of this floor and later refilled it to about +9.0 m, which is the modern floor seen in the reconstructed temple. Above some 4 m of infill up to +12.0 m, Koldewey’s excavation uncovered a third floor, Level 3 as the main excavation level. A fourth floor, Level 4, with Nebuchadnezzar bricks, was attested at about +13.5 m and a fifth floor, Level 5, also with such bricks, at about +14.5 m. The three upper floors were completely removed during the Iraqi reconstruction of the temple (Figs. 4.40, 4.41). When the levels of the floors and the walls were raised, an outside protective wall of baked brick, a kisû, was added around the outside of the external unbaked mudbrick walls under the new surface. This seems to have been done for Level 3, when the 2 m-thick kisû was founded at +4 m. A second kisû was added, probably for Level 4, with a foundation at +9.5 m (Figs. 4.39, 4.40, 4.45, 4.47, 4.48).90

Characteristic of the findings of the German excavation were the well-preserved mudbrick walls standing quite high, especially in the west half of the temple. These walls stood much higher than the nearby baked brick walls in other buildings, because only the baked bricks were of interest to the brick miners. The temple mudbrick walls were, in places, still covered with an original ca. 1 cm of white lime-gypsum plaster over a somewhat thicker mud plaster. Remains of such plaster were recorded both on the outer façade next to the north entrance in Levels 1 and 2 and on the walls of the courtyard in Level 3 (Figs. 4.41, 4.42). The kisû being of baked brick was much less preserved.91

At Level 0 at +3.50 m, the 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.92 The cylinder seems to have been redeposited in a secondary position, and the question is whether the clay tablets may date the foundation of the present version of the temple. Limited remains of a Level 2 floor at +8.0 m (possibly also to be dated to the reign of Nebuchadnezzar) were reported but not extensively examined.93 At about this level, the German excavators unearthed another group of clay tablets dealing with construction work including mudbrick, probably all dated early in the reign of Nebuchadnezzar.94 The floor of Level 3 at +12.0 m is the best-preserved floor, with bricks of the size 30 × 30 cm without any inscription. On this floor in the courtyard stood a small bit of a baked brick wall with Nebuchadnezzar and Nabonidus inscriptions. Slightly above the floor are traces of a 40 × 40 cm brick pavement. Both Level 4 at +13.5 m and Level 5 at +14.5 m have floors made of bricks of 33 × 33 cm with Nebuchadnezzar inscriptions. However, under the Level 4 floor were found the remains of an archive of clay tablets dealing with the rebuilding of the temple during the late years of Nebuchadnezzar and first years of

90 Koldewey 1911, 4–17, pls. 2–3. Perhaps even a third kisû in the south.
91 Koldewey 1911, 6–7. Analysis shows that the plaster was essentially gypsum plaster, Müller-Skjold 1957, 69, tab. 7.
93 Koldewey 1911, pl. 3; Pedersén 2005, 135–143 N5.
94 Pedersén 2005, 135–143 N5.
Amēl-Marduk. The last dated tablet in the group is from Amēl-Marduk year 1, i.e. 561 BC, which, therefore, would be the earliest possible date for that floor.

In cuneiform historical texts, there are (beside the single reference to Assurbanipal’s construction of the Ninmaḫ temple given above) a number of texts telling of Nebuchadnezzar’s rebuilding of the temple. This is often given in connection with accounts of Nebuchadnezzar’s construction of other temples, such as the Nabû ša ḫarē temple. Details of the Ninmaḫ temple were given especially in inscriptions dealing with the kisū around the temple and the infilling carried out in connection with raising the level.

It would be possible to interpret the cuneiform evidence and the brick sizes in somewhat modified ways. The brick sizes of Levels 0 to 3 agree with those of Nabopolassar or early Nebuchadnezzar. Those of Levels 4 and 5 are standard-sized Nebuchadnezzar bricks bearing his inscription, but as seen above they were probably used somewhat later. The

---

96 Langdon 1912, 84–85 Nebukadnezar 6, 204–205 Nebukadnezar 43; Weiershäuser – Novotny 2022, Nebuchadnezzar II 29.
simplest solution may be to treat Levels 0 to 3 as early Nebuchadnezzar constructions and Level 4 as a construction late in Nebuchadnezzar’s reign, completed during the rule of his successor. Level 5, still using Nebuchadnezzar bricks, may be a somewhat later reconstruction, perhaps during the reign of Nabonidus or later. This would require that the baked brick construction with both Nebuchadnezzar and Nabonidus baked bricks in the courtyard was partly under the later pavement like a pool or as a foundation of a pedestal.

The reason for the substantial increases in the height of the floor of the Ninmah temple during the reign of Nebuchadnezzar was the successive raisings of the Processional Way and the Ishtar Gate, next to the temple, by several metres during the same period (Figs. 4.40, 4.41, 4.42).\(^\text{97}\)

The highest visible original unbaked mudbrick walls, in other parts of the temple still mostly covered with modern plaster, are standing up to 3 m above the floor in the northwest room inside the reconstructed building (Fig. 4.43). During the German excavation the original mudbrick wall in the northeast corner of the inner courtyard was standing up to a little more than +14.5 m, which is 5.5 m above the present reconstructed temple floor. On the now exposed wall around the courtyard the highest preserved original mudbrick wall is 2.8 m above the +9.0 m floor (Fig. 4.44). The thickness of the walls is 2.4 m and the assumed maximum height of the walls in the digital model is 9.0 m.

The reconstruction of the Ninmah 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 a reconstruction of the lower parts of Nebuchadnezzar’s baked

brick *kisû* from Level 3. The mudbrick 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 now in the old style, and parts of the baked brick *kisû* have been raised to a middle level. The floor is at about +9.0 m.
The digital model can be used to calculate the possible number of bricks used after the end of the reign of Nebuchadnezzar, when Level 5 stood at +14.5 m. From the bottom of the foundation to the top of the temple the volume of unbaked mudbrick was 16,100 m³, corresponding to 1,240,000 unbaked bricks. The part of the temple that was visible above the surface was 6,700 m³ in volume, corresponding to 520,000 unbaked bricks. This can be compared to the 400,000 unbaked mudbricks of the old size prepared for the reconstruction of the temple ruins in 1961.98

98 Baqir 1961, 7.
In the higher levels of the temple, the mudbrick construction was supported by means of a double underground *kisû* measuring 5,580 m³ made up of 507,000 baked bricks (*Fig. 4.48*). According to the German excavations, the floors in the rooms and the courtyard were constructed of a double layer of baked bricks covered with asphalt. A total of 16,500 baked bricks would have been required for one such double brick floor. As seen above, there is evidence of five floors, which would give 82,500 bricks in total; but even if all had been preserved, only one floor could have been in use at any one time.

The Ninmaḫ temple was the first temple in Babylon to be reconstructed. It gives a good idea of the construction of a typical Babylonian temple, and in theory the reconstruction protects the original remains of walls inside it. However, for a period, a heavy concrete roof covered the mudbrick walls, leading to their partial collapse. The roof has been replaced by a more appropriate construction and collapsed sections of the external wall have been partly rebuilt with baked brick. All the walls are covered with mud plaster. More of the ancient colour scheme, with whitish lime-gypsum wall plaster on the mud plaster and black asphalt floors, has been applied in the digital model (*Fig. 4.47*).
4.8 Ninmah temple

Fig. 4.48. Development of the Ninmah temple. Model: Pedersen.
4.9 Ninurta temple

The temple for the warrior and farmer god Ninurta had the name E-ḫursag-tilla (“House which exterminates the mountains”).\(^9\) It was situated in the Šuanna area, in the part that in modern times is called Ishin Aswad, some 130 m east of the Išḫara temple (UTM 44\(^{4}\) 6140E 359\(^{9}\) 400N, Figs. 2.2, 4.2).\(^{10}\) The German excavators unearthed the 1,780 m\(^2\) temple in 1901. There were three cellas in the temple, the most highly adorned middle one for the god Ninurta. The temple is now covered by earth and the contours of it can be seen only as a lower area in the terrain (Fig. 4.49).\(^{11}\)

The plan of the temple has some rather special aspects. The temple was entered from the east through the main entrance, which has a double altar outside. In the centre of the temple is an unusually large courtyard, about 14 × 28.5 m or 400 m\(^2\), in front of the three cellas, which are 36 m\(^2\), 36 m\(^2\), and 22 m\(^2\) respectively in area; all three are 5.2 m wide. The south and north entrances to this courtyard from the outside are quite special. They are extremely wide, 3.5 m, so it would have been possible for a large procession, including wagons, to enter (Fig. 4.50).

The foundation of the walls of the temple is at about −0.7 m. By comparison with other temples in Babylon and elsewhere, there was probably a first Level 0 floor at about

---

\(^9\) The temple name was written É-PA.GÍN-tilla or É-PA.ŢU-tilla during Nabopolassar.


±0.0 m, or at least this may have been planned, even if no remains have been found in the small area excavated to this depth. The first attested floor of Level 1 at +2.4 m has baked bricks of 31 × 31 or 32 × 32 cm, without inscriptions (Fig. 4.51).\footnote{Koldewey 1911, 25–33, Blatt 2–5, pls. 6–7.}

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.\footnote{Da Riva 2013a, 54–63; Weiershäuser – Novotny 2022, Nabopolassar 7.} This could be understood to mean that the lower Level 0 was the unfinished temple, perhaps

---

\textbf{Fig. 4.50. Plan of Ninurta temple. German excavations. Three cellas: main cella (M.C.), north cella (N.C.), and south cella (S.C.) west of courtyard (Hof). W. Andrae 1902 in Koldewey 1911, pl. 7.}

\textbf{Fig. 4.51. Ninurta temple (between red markers), German east–west section. From left: two altars in front of entrance, central courtyard (Hof) and south cella (S.C.). Four floor levels marked (dark blue, light blue, yellow, orange). Andrae 1902 in Koldewey 1911, pl. 6.}
from the time of Esarhaddon or Assurbanipal. The floor of Level 1 belongs to the temple of Nabopolassar.

The upper floors of Level 2 at about +3.2 m, Level 3 at about +3.9 m, and Level 4 at about +4.5 m all have bricks sized 33 × 33 cm with inscriptions of Nebuchadnezzar. The lower ones, at least, belong to his reign, and the highest may also; or perhaps these bricks were reused during a somewhat later period (Fig. 4.51). The walls are 2.8 m thick, and the assumed maximum height of the walls in the digital model is 10.0 m.104

There was white wall plaster in 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.105 In front of the eastern main entrance door, two plastered, unbaked mudbrick altars like the double altar at the Nabû temple were excavated (Figs. 4.52, 4.53).

An archive with something like 550 clay tablets was partly excavated by the German archaeologists, and partly purchased from earlier clandestine excavations. The archaeologically excavated tablets were from an upper level (often disturbed, because of the clandestine excavations) in the southeast of the temple, Rooms S4 and S3. The best stratified were 50 cm above the upper floor, ca. +5.7 m. The archive’s owners were a man called Ṭābija, his wife Bābu-šarrat, and in later years their son Marduk-šuma-ibni, and

---

104 Koldewey 1911, 25–33, Blatt 2–5, pls. 6–7. On Koldewey 1911, 28, Blatt 3 figs. 29, 30, 31, the references to north gate and north cella should be south gate and south cella.
105 Koldewey 1911, 27.
it included clay tablets dating from Nebuchadnezzar year 6 (599 BC) to Darius I year 18 (504 BC).  

The last reference to the temple seems to be in the Astronomical Diaries for year 199 BC, in a broken context.  

4.10 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 known today as west Ishin Aswad or southeast Amran, some 130 m west of the Ninurta temple (UTM 445950E 3599420N, Figs. 2.2, 4.2). As it was not possible to identify any god securely for this temple during the

---

excavation, it was first called the West-temple, then in the publication the Z-temple. Later on, it was wrongly identified as the Gula temple, an error that should be avoided. The correct designation as the Išḫara temple was established according to the cuneiform text Tintir. The German excavators unearthed the 1,710 m² temple in 1901–1902. The temple is now covered by earth and its contours can be seen only as a lower area in the terrain (Fig. 4.54).

The foundation of the unbaked mudbrick walls of the temple stands at −0.2 m. The first floor, Level 1, would have been at ±0.0 m; this would be clear from the preserved white lime-gypsum plaster with black bitumen decoration, even if no preserved floor bricks were found. Level 2 at +0.9 m has the platform in the cella preserved with bricks carrying Nebuchadnezzar inscriptions. A substantial, almost 4 m infilling up to Level 3 at +4.7 m has preserved a lot of the white lime-gypsum plaster with black bitumen decoration. All the small preserved areas of the Level 3 floor, like the floors of Level 4 at +5.3 m and Level 5 at +5.8 m, are constructed of Nebuchadnezzar bricks (Fig. 4.56). The thickness of the walls is 2.2 m to 2.4 m and the assumed maximum height of the walls in the digital model is 9.0 m (Figs. 4.55, 4.58). The central courtyard was 11.2 × 13.4 m or 150 m². The antecella was 67 m² and 5.0 m wide and the cella was 41 m² and 4.1 m wide.110

108 Koldewey 1911, 18–24, pl. 5.
110 Koldewey 1911, 18–24, pl. 5.

Fig. 4.54. Išḫara temple. The low-lying area with vegetation is the location of the cella and ante-cella. The top of the remains of walls from the German excavation should be just under the surface. Photo: Pedersén, December 2018.
There are no preserved historical texts mentioning building work connected with the Išḫara temple in Babylon. We have only the inscribed bricks of Nebuchadnezzar mentioned above. The dating of the foundations and Level 1 floor may be early Nebuchadnezzar, but an earlier date, such as Nabopolassar or Assurbanipal, would also be possible. As Level 2 and the group of Levels 3 to 5 are all dated by Nebuchadnezzar bricks, Level 2 and the great infilling of Level 3 would certainly belong to his reign. Levels 4 and 5 are only minor raisings of the floor and may either date from the same reign or involve later reuse of Nebuchadnezzar bricks, e.g. during Nabonidus’ reign.

Some of the white lime-gypsum plastered walls had black geometric decoration, like that in the Nabû, Ištar and Ninurta temples. The blackness was first interpreted as the result of a fire on a wooden construction, but when the same black pattern on the walls

\[\text{Koldewey 1911, 20.}\]
was subsequently also found on the walls of the Ištar temple the excavators changed their interpretation and considered it as original intentional decoration with bitumen, and not burnt wood,\textsuperscript{112} something even better demonstrated by the later excavation of the Nabû temple. The door openings from the courtyard to the ante-cella and cella were black and there were black bands on the walls in these rooms, as in the other temples described above (\textit{Figs. 4.57}, \textit{4.58}).

The German excavators unearthed only 16 clay tablets in connection with the temple. They date to the period from Esarhaddon year 6 (675 BC) to Darius I year 24 (498 BC).\textsuperscript{113}

4.11 Temples in the unexcavated areas of Babylon

So far, all excavations have been concentrated in the west half of east Babylon, where all the excavated temples described above were found. Only limited excavations have been executed in the east half of east Babylon, and none at all in west Babylon. According to cuneiform texts, especially \textit{Tintir} tablet 4, a number of temples were situated in these completely unexplored areas. The town areas with their temples will be briefly described below, according to the listing in \textit{Tintir} (\textit{Fig. 4.2}).\textsuperscript{114}

\textsuperscript{112} Reuther 1926, 131.
\textsuperscript{113} Pedersén 2005, 272–273 N16.
\textsuperscript{114} For more details, see George 1992, 58–59, 300–310; George 1993.
4.11 Temples in the unexcavated areas of Babylon

The New Town (ālu eššu) area is the northeast section of east Babylon, inside the northeast corner of the city walls (Fig. 4.2). The Tintir text documents three temples here.

The throne-dais (parakku) of the god Nabû, named E-uru-nanam (“House, the very city”), stood in the New Town. Other temples of Nabû were in Eridu and Kadingirra in east Babylon and in Tuba in west Babylon.

There were two Ištar temples in the New Town. The temple of the goddess Bēlet-Eanna (or Ištar of Eanna), called E-kituš-girzal (“House, abode of joy”), was situated on the canal bank at the border with Kullab, according to Tintir, tablet 5, and private documents.

The temple of the goddess Ištar-of-the-Stars (Ištar kakkabī) named E-anda-saa (“House which rivals heaven”) was also situated in the New Town area. Other Ištar temples were situated in Eridu, Kadingirra, Kullab in east Babylon, as well as in Bāb-Lugalirra and Tuba in west Babylon.

Fig. 4.58. Išḫara temple. White walls inside some main rooms, with black bitumen decoration. Model: Pedersén.
Temples in the Kullab area in east Babylon

The Kullab area is the middle part of the east half of east Babylon, west of the Marduk Gate (Fig. 4.2). The Tintir text lists four temples in Kullab.

The temple of the moon god Šīn had the name E-gišnu-gal (“House of the great light”) (old E-kišnu-gal) and has a long recorded history. Hammurapi year 3 records the dedication of throne and 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 in 133 BC in the Astronomical Diaries. Another temple of Šīn was in Eridu in east Babylon.

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 located 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 also situated in the Kullab area. Another temple of the same god stood in Kumar in west Babylon.

The temple of the goddess Lugalbanda E-sag (“Foremost house”) was also situated in the Kullab area.

Temples in the Tē area in east Babylon

The Tē area is the southeast part of the east half of east Babylon, west of the Zababa Gate, and the lowest city area inside the inner city wall in Babylon; presently it is sometimes under water (Fig. 4.2). The Tintir text lists three temples here.

The throne-dais (parakku) of the Igigi gods named E-dur-kuga (“House, pure abode”).

The throne-dais (parakku) of the Anunnaki gods called E-ka-gula (“House of the great gate”).

The temple of the goddess Nanāy with the name E-me-urur (“House which gathers the me’s”).

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, to the south of the southern part of the modern Babylon Conference Centre and in western direction over the modern river (Fig. 4.2).

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 with 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”) stood in the Bāb-Lugalirra area. Esarhaddon mentions the temple in connection with the restoration of divine statues. It is mentioned in 322 BC and again in 171 BC. 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 located in the Bāb-Lugalirra area.

**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, stretching from the ridges on the east side of the modern river all the way to (and including) Sinjar village (Fig. 4.2).

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. Hammurapi refers to the temple as a warehouse of Enlil. Year formulas for Ammidītana, Ammiṣaduqa, and Samsu-ditana deal with statues and furniture for the temple. Probably also Burnaburiš is involved. The temple is mentioned in the Astronomical Diaries for 235 BC.

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 of the goddess Belili called E-ka-dimma (“House which creates …”) was situated in the Kumar area.

The temple of the god Amurru, with the name E-me-sikilla (“House of the shining me’s”), stood in the Kumar area. Another temple of Amurru was in Eridu in east Babylon.

The temple of the sungod Šamaš, named E-diku-kalamma (“House of the judge of the land”), has a long history. It was known in the the Old Babylonian year formula with Abi-ešuḫ and Apil-Sīn, who in year 16 constructed a throne-dais. Nebuchadnezzar rebuilt the temple with asphalt and baked brick according to inscriptions.

The temple of the god Pisangunuk, called E-esir-kalamma (“House of the street of the land”), was also situated in the Kumar area. Another temple of Pisangunuk was in Kullab in east Babylon.

The temple of the god Adad, named E-namḫe (“House of plenty”), stood in the Kumar area. It is well attested in the Old Babylonian period with Sumulael rebuilding, Hammurapi year 28 rebuilding, Samsu-ilūna year 27 image of silver, Abi-ešuḫ year 26 lightning forks of gold and silver, and Ammiṣaduqa. It is mentioned during the reign of

---

Nebuchadnezzar I and rebuilt during that of Nebuchadnezzar II. Another temple of Adad was in Eridu in east Babylon.

Temple 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 and further north and west (Fig. 4.2).

The temple of the goddess Bēlet-Eanna (or Ištar of Eanna), called E-kituš-garza (“House, abode of the regulations”), was situated in the Tuba area. Nebuchadnezzar II rebuilt the temple, which was said to be located at the outer corner of the city wall (tubqat dūri). 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”) stood in Tuba. Esarhaddon mentioned the temple and Assurbanipal rebuilt it. Nebuchadnezzar II rebuilt it 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. The temple survived into the Parthian period about 90 BC, as is clear from the Rahimesu archive and related texts. Another temple of Gula stood in Eridu in east Babylon.

The god Nabû had a temple named 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.

Temple of New Year Festival and daises

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 akitu (New Year) festival, situated outside and to the north of the Inner City. Nebuchadnezzar built the temple with baked bricks (agurru) and asphalt, but the Astronomical Diaries year 133 BC refer to a mudbrick (libittu) construction. The site has so far not been securely identified (but see Section 7.4 for a discussion).

For daises and pedestals see Sections 2.4, 6.3 (Figs. 2.28, 2.32, 6.9).

121 Sigrist – Damerow 2001; Frame 1995 B.2.4.1 purchased by the German excavations; Da Riva 2012, 54–55.
125 van der Spek 1998.
5 Babylon: Main Streets

Abstract
An overview of the main streets in Babylon, especially the Processional Way, chiefly from the Neo-Babylonian period. Attempts are made: to distinguish different construction phases, using German and Iraqi excavations combined with cuneiform and other ancient texts; to relate these to the remains now to be seen in Babylon; and to give reasonable interpretations. Comparisons are drawn with streets in domestic areas.

5.1 Introduction
Only one main street has been excavated for a long section: the south–north Processional Way of Marduk, going north from the Marduk temple. The beginning and end of this street have not been found. A stretch of some 1,200 m has been attested, mostly through the trenches of German archaeologists. More than half of this length, almost 800 m, has now been exposed by Iraqi archaelogists for visitors. What the German archaeologists treated as the west–east section of the same street has been attested in (now covered) trenches for an additional ca. 500 m. The latter street started at the famous bridge over the old Euphrates (Figs. 5.1, 6.2). Another Processional Way of Nabû, going south from the Marduk temple to the Uraš Gate, is referred to in cuneiform texts but has so far not been identified on the ground.¹

Table 5 of the cuneiform text Tintir describes several more main streets:²

Wide Street (sūqu rapšu): “He hears his seeker”
Narrow Street: “Bow down, O haughty one”
Street of Babylon: Ay-ibūr-shabû “May the arrogant not flourish”
Street: “His shade is pleasant for sleeping”
Street: “What god compares to Marduk ...”
Street of the Uraš Gate: Nabû-dayyān-nišēšu “Nabû is the judge of his people”
Street of the Zababa Gate: “Zababa is the destroyer of his foes”

¹ Ismail 1985; George 1992, 69, 361–362; Weiershäuser – Novotny 2022, Nebuchadnezzar II 34.
Street of the Marduk Gate: “Marduk is the shepherd of his land”
Street of the Ištar Gate: Ištar-lamassi-ummānišu “Ištar is the guardian angel of his troops”
Street of the Enlil Gate: “Enlil is the establisher of his kingship”
Street of the King’s Gate: “Sīn is the establisher of his lordly crown”
Street of the Adad Gate: “Adad is the provisioner of his people”
Street of the Šamaš Gate: “Šamaš is the protection of his troops”
Street: “Pray, that he may hear ...”
Street of Damiq-ilīšu
Four Streets
Street of the divine heptad
Street of the divine twins
Street: “Gladden his land, worship is his gift”
Street of Marduk: “He listens to the distant”

The Processional Way is here given two names: Street of Babylon, Ay-ibūr-šabū, and Street of the Ištar Gate, Ištar-lamassi-ummānišu. Obviously, the street had a different name in the area of the Ištar Gate. As the eight gates in the inner city walls either have been excavated or can be placed more or less securely on the line of the wall, it is possible to locate the streets connected with those gates approximately. Perhaps the very wide street leading to the main eastern entrance to the ziggurat precinct was the Wide Street in the text; if so, it would be the continuation of the Street of the Marduk Gate. The rest of the streets listed here cannot be placed on a map for the time being (Figs. 5.2, 6.2).

An important aspect of the following treatment is the attempt to identify the levels of
Fig. 5.2. The east inner city of Babylon, showing the main streets (red) known from excavations or texts. 200 m UTM coordinate grid on map. Cf. Fig. 2.2. Map: Pedersén.
the Processional Way and to establish a dating for as many of the levels as possible. With
the Iraqi exposure of much of the street, and new excavations beside it, the possibility of
dating Neo-Babylonian street levels has now increased considerably. How old the street
may have been, however, has not been established. German excavations have shown that
a late Old Babylonian building was situated under the street (see Section 5.4 below),
so the oldest level of the Processional Way has to be later. If the dating of Tintir to the
Middle Babylonian period can be proved, it will provide a date in that period, as the
street is mentioned in the text. If Tintir could be shown to have a later date, the street with
its present alignment may even be Neo-Assyrian.

5.2 The Euphrates bridge
The bridge over the old Euphrates (UTM 445470E 3599830N, Fig. 6.2) was about 120 m
long. The distance between the abutments was originally 126 m, and later, when the east
abutment was moved, it was reduced to 110 m. The German excavation from August
1910 to February 1911, with minor work thereafter, unearthed the remains using pits and
trenches in order to establish a plan of the construction (Figs. 5.3, 5.5). Iraqi excavations
in 1978–1979 exposed more completely an upper level in the eastern part of the bridge.
A modern street now passes over the remains of the western half of the bridge. As the
exposed area of the bridge is lower than the surrounding terrain, it collects water and
tends to become heavily overgrown with vegetation (Fig. 5.4).

During the excavations, the German excavators numbered eight pillars under the
bridge, counted from the east. The first and the last were used as abutments; after the
construction of the so-called Nabonidus embankment, the second pillar from the east
was also used as an abutment. The result was that at first, there were six freestanding
pillars, but later on, only five. In the publication the original numbering was changed and
it was counted with six pillars even after the last embankment had been added.

At the first pillar, the German excavators attempted (during a period of low water
level) to reduce the water level even further by means of continuous shovelling away of
water. In this way, excavation was made possible down to −4.0 m, where there seemed
to be the top of a wider foundation. The depth of this foundation was not possible to
establish (Fig. 5.5). A guess, based on the type of construction and other nearby walls,
may be about −5 m or possibly deeper.

The pillars were 21 × 9 m with various preserved height, and the remains stand at
a distance of 9 m from each other, except between the westernmost one and the west
abutment. The pillars and the abutments are all of baked bricks and asphalt mortar; only
the east side of pillar 6 had two layers of stone from +1.9 m downwards. The brick size

3 George 1992, 4–7, opted for the 12th century owing to ideological similarities with the Epic
of Creation.
4 Wetzel 1930, 54–57, pl. 51.
5 Wetzel 1930, 54–57, pl. 51. The east abutment was originally counted as pillar one.
Fig. 5.3. Aerial view of the German excavations (pits and trenches) between Esagil and Etemenanki. The bridge is between the red markers; the street continues to the yellow marker and beyond. Cf. maps on Figs. 4.4, 6.2. Photo: Royal Air Force, August 1923 (Excerpt from AP72, © UCL Institute of Archaeology).

Fig. 5.4. Bridge, partly covered by vegetation, between the red markers (which are shown at the same locations as in Figs. 5.3, 5.5). German excavations, by means of pits, 1910–1911. Iraqi excavations 1978–1979. Photo: Pedersén, December 2018.

is 31 × 31 cm and the bricks are without inscriptions, something that would agree with a dating during the reign of Nabopolassar or early in that of Nebuchadnezzar. As the space between the first pillar and the abutment was quite soon filled in, when the last version of the embankment was constructed, the east side of this pillar is the best preserved and gives information about the side surface. All the other sides of all the pillars are affected by water in the river, even more so towards the western end of the bridge in western direction, if the surface is preserved at all.

Street levels are preserved just east of the bridge at about +2.3 m and at about +3.1 m, but it is possible that there were more levels at the bridge, both deeper and higher. There
are holes for wooden beams under streets in the eastern abutment and in the pillar, at about +1.5 m and even at about +1.0 m. Another possible street level would have been above the top of the first pillar, which is standing up to +3.8 m. There were obviously a series of rebuilding actions during the lifetime of the bridge. We do not know when the bridge went out of use, but at some point, the river moved westwards, and from the Parthian period there are the remains of a colonnaded street at +6.5 m, running in a west–east direction above the ruins of the eastern buttress and the first pillar (Section 7.3).6

The most characteristic artefacts in connection with the bridge were the ca. 260 terracotta lamps unearthed mostly at pillar 3, under the middle of the bridge.7

5.3 West–east Processional Way

Along the south side of the ziggurat precinct, all the way from the bridge and the gate on the embankment to the southeast corner of the precinct (a distance of about 500 m), ran a main street separating the area around the Marduk temple from the ziggurat precinct (Figs. 4.3, 4.4, 5.3, 5.6, 5.7, 6.2). Sometimes this street is called Processional Way, like the south–north one.8

During the German excavations, Wetzel was responsible for unearthing the street at the bridge and the gate in the embankment, and all the way along the southern precinct of the ziggurat. The main objective was to follow the walls of the precinct and, in the west,

---

6 Wetzel 1930, 54–57, pl. 51.
7 Wetzel 1930, 56, pillar 4 given in the publications is according to the old numbering at the excavations, and should have been pillar 3.
8 Wetzel 1930, pl. 51; Wetzel 1938, 23, pls. 9–13; Wetzel – Schmidt – Mallwitz 1957, pl. 16 (with Grube 77 and Schnitt A-A).
5.3 West–east Processional Way

Fig. 5.6. Neo-Babylonian street running west–east and the south–north Processional Way, to the southeast corner of the precinct of the ziggurat (blue). Remains of a Parthian colonnaded street (yellow) have been found 7 m above the Neo-Babylonian street. Photo: Pedersén, October 2017.

Fig. 5.7. West–east Processional Way about +2.3 m, looking towards the gate in the embankment. Right: Precinct walls around the ziggurat with three of the four entrances (blue markings). Left: Part of possible precinct around the Esagil. Possible stone paving has not been shown. Model: Pedersén.
to examine the embankments. The western part of the street was, therefore, attested only at the bridge as described above, and it was assumed to continue under the unexcavated, high Amran area up to Gate 8 of the precinct, where more extensive excavations were conducted on an upper Parthian level (Section 7.3) and the Neo-Babylonian street was attested in a trench at +2.8 m. The eastern half of the street was reached in a series of 12 trenches (German: Grube), some of them with published sections (German: Schnitt); in eight of the trenches the street was attested at the height +2.1 m to +2.5 m. It was made of asphalt on brick; a probable upper covering of stone, assumed by the excavators, had been taken away (Figs. 4.3, 4.4, 5.3, 5.7). Remains of the street were often missing in the trenches and more than one level was not possible to secure.

The north side of the street has been rather well established, along the wall of the precinct, with four 21 m-wide and 25 m-long open spaces in front of Gates 6 to 9 to the ziggurat area (Fig. 4.4). The south side of the street is more or less unknown, as the trenches searching for the street were normally not extended far enough to the south. In front of Gate 8, in connection with the more extensive Parthian excavation, was found a wall with its foundation at +2.0 m, parallel with the street and at a distance of 20 m from the ziggurat precinct. It may be from a Neo-Babylonian precinct around the Esagil. This would give approximately the same width of the total street area as existed to the north of the Ištar Gate, but with the paved street only 6.4 m wide here and not running through the centre of the space, but near the north wall (Fig. 5.7). That would be similar to the street placement in the area of the Nabû temple, where the paved section of street is in the western part of the open street area.9

5.4 South–north Processional Way: Southern stretch
The south–north Processional Way is attested for almost 1,200 metres, with a section of about 150 m missing south of the South Palace. This exposition will start with the 415 m stretch east of the precinct around the ziggurat and another 125 m to the north of it, between the Nabû and Ištar temples, to the point where the street is broken off.

To the main entrance to the ziggurat
The area in which the southernmost 180 m section of the Processional Way lies, from the southeast corner of the ziggurat precinct to the main eastern entrance to the ziggurat area, was excavated by the German archaeologists mainly in order to establish the wall of the ziggurat precinct, and the street itself was reached only in a few trenches. That being the case, it is not possible to know if the absence of evidence for a street here is mainly due to lack of excavation, or if the remains had been destroyed previously. No information has been found regarding a later Iraqi exploration of the upper level of the street here (Figs. 4.3, 4.4, 5.8, 6.2).10

---

9 Wetzel – Schmidt – Mallwitz 1957, 31, pl. 15. In the publication the long wall was treated together with the Parthian building, but the unusual deep foundation was noted.
10 Wetzel 1938, pl. 9.
A date for the first construction of the Processional Way in this area cannot be given, but it was at least after the Old Babylonian period. The excavators unearthed a late Old Babylonian building under the southern section of the street, effectively blocking any passage (Fig. 4.4, “Alterer Bau”). The building was dated by means of clay tablets and pottery from a level ±0.0 m to −0.5 m. According to the excavators, an old street pavement at −1.2 m seems to have been cut when the late Old Babylonian building was constructed. If this is correct, that early street level would be slightly earlier Old Babylonian, but its direction is not known.11

The Processional Way here was possible to reconstruct from the little information available. It consisted of brick and was 6.4 m wide at an elevation of ca. +2.4 m. Above this, there was probably a stone layer, as is preserved in the more northern stretch of the street.12

The main entrance to the ziggurat
The main entrance to the ziggurat on the east side of the precinct had an opening about 30 m wide in front of the main door to the ziggurat area, called Gate 5. The length of the

---

11 Wetzel 1938, 22–23, pls. 2, 9; Pedersén 2005, 63–65 A7. The tablets were dated paleographically to the late Old Babylonian period and a restudy of the ceramics to be published by K. Sternitzke now also gives them the same date.
12 Wetzel 1938, pl. 9. The level at +2.8 m is disregarded here as it doesn’t seem to be a similar street level.
Fig. 5.9. Aerial view of German excavations. The Processional Way stretches from the main entrance to the ziggurat precinct (yellow), past the northeast corner of the same precinct (orange), to the southeast corner of the South Palace (red). Cf. Fig. 5.39 for the resulting map. Photo: Royal Air Force, August 1923. (Excerpt from AP75, © UCL Institute of Archaeology).
open space is not known as the inner west part, together with the gate itself, was totally destroyeds (Figs. 4.4, 5.9, 6.2). The German excavators unearthed a more extensive area at the main entrance, where they found the Processional Way rather well preserved with stone paving still covering the bricks (Fig. 5.11). Later, in the 1980s, Iraqi excavators continued the work, uncovering an even larger area (Fig. 5.12). This area has now been covered with earth and, as it is a low point in the terrain that collects water, a lot of green vegetation has grown there (Fig. 5.10).\(^\text{13}\)

The Processional Way was 6.4 m wide at this point, with a brick foundation 20 bricks wide covered with asphalt. The attested thickness could be one, two or three bricks. This gives a brick with mortar as 32 cm or a brick size of 31 × 31 cm. This brick foundation has generally been ascribed to the reign of Nabopolassar or early in the reign of Nebuchadnezzar.

On top of the bricks, on the west and middle parts of the street, was a layer of reddish breccia slabs. This stone layer was 4.2 m wide, and made up of rows, each seven stones across. Thus a single stone with mortar measured 60 cm in width, and the stone itself ca. 59 × 59 cm. The remaining 2.2 m-wide eastern part had traces of bricks covered by asphalt. The street was separated from the precinct wall by some 2 m, partly occupied by a \textit{kisū} (Fig. 4.13, 5.13). Many of the breccia stones had a cuneiform inscription, saying that Nebuchadnezzar built the Processional Way of breccia stones (\textit{turminabandū}).\(^\text{14}\) If the bricks and stones are treated as a unified construction, the date of the preserved and

\(^{13}\) Wetzel 1938, 22, pl. 8; Ishaq 1985, 30–33, Arabic 48–54.

\(^{14}\) Koldewey 1901.
Fig. 5.11. German excavations of the main east entrance to the ziggurat, next to the Processional Way. Reddish breccia stones, 59 × 59 cm, at +3.0 m. Cf. Fig. 5.12. Photo: Koldewey, February 1902. (Bab Ph 135, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 5.12. Iraqi excavations, around 1980, of the Processional Way (yellow) where it met the main east entrance to the ziggurat, at +3.0 m (UTM 445970E 3600125N). This southern section of the street is about 4.2 m in width, made up of seven reddish breccia stones, each about 59 × 59 cm. Cf. Figs. 5.11, 5.13. Photo: Ishaq 1985, Arabic 52 fig. 8.
exposed upper level would be in the early years of the reign of Nebuchadnezzar.

At the main entrance, a similar street, running perpendicular to the Processional Way, entered the ziggurat area, but was not preserved closer to the ziggurat. This street had the same construction and materials, and was 4.2 m wide with rows of seven breccia stones (Figs. 5.11, 5.12, 5.14).
Fig. 5.15. Southern part of the Processional Way. Pavement of breccia stones, seven stones in width, 4.2 m wide, at +3.7 m (blue markers). To the east of the street, bricks and further away an open area with earth. Photo: Pedersén, December 2018.

Fig. 5.16. Southern part of the Processional Way. Upper street level with brick foundation for the paving stones, left +4.9 m and right +5.0 m (dark blue), and in between the middle street level at +3.4 m (light blue). Photo: Pedersén, December 2018.

North of the main entrance to the ziggurat
The Iraqi excavations around 1980 have given a more comprehensive picture. The street is no longer known only through a few German trenches but is exposed for its full known length, which is appropriate when showing the area to visitors. North of the main entrance
to the ziggurat, the remains of two or sometimes three street levels are preserved. The street slowly starts to climb uphill, with the upper street levels having a steeper gradient. The uppermost street level continues as before, with a paved section seven breccia stones in width, and additional space beside it once surfaced with now often robbed bricks (Fig. 5.15). Before the street reaches the small east entrance to the ziggurat area, the breccia stones terminate on the upper street level, and the bricks continue until just before the small entrance, where the upper level terminates at a level of +5.0 m (Fig. 5.16). Already some 10 m before this point, the middle street level is exposed on the west half of the street, starting at about +3.4 m. The bricks of this middle, always somewhat ascending, street level are preserved for some 260 m. Here, at the north end, at an elevation of +5.8 m, all street levels are cut away (Fig. 5.17, 5.19).15

**Outside the Nabû temple**

The exposed middle street level at the entrance to the Nabû temple has been measured to be +5.2 m. The reconstructed temple has a floor at +3.8 m, which would be just above the original level for the Esarhaddon temple, to which there must have been a deeper street level, and this is documented farther to the north at +3.2 m. The Nebuchadnezzar temple was constructed about 4 m higher. A corresponding street would have been at about +7.5 to +8.0 m. Such a street with a stone pavement has been documented further to the south (Figs. 5.16, 5.17, 5.18, 6.2).

The higher street level would be required in order to give appropriate access to the Nebuchadnezzar Nabû temple. An additional argument for this dating comes from the brick box with three clay cylinders describing Nebuchadnezzar’s elevation of the Processional Way. The box, standing on the middle street level on the east part of the bricked street, a few metres north of the northeast corner of the precinct of the ziggurat,

15 Wetzel 1938, 22, pls. 7, 8; Ishaq 1985, 30–33, Arabic 48–54.
can only make sense as a foundation box placed there when the work started for the raising of the street to the uppermost level, which is described in the text.\textsuperscript{16}

\textsuperscript{16} Cavigneaux 1981a, 123 section with marking of the brick-box standing on what is there called level II of the street; Ishaq 1985, 30–33, Arabic 48–54; Ismail 1985; Weiershäuser – Novotny 2022, Nebuchadnezzar II 34.
Some 40 m north of the Ašratum temple, the middle street level, now covered with only a little earth, terminates at an elevation of +5.8 m. The lower street level, now covered by earth of about 2 m depth, continues for another 6 m before the end at about +3.2 m (Fig. 5.19). Up to this point, all exposed brick areas of the street have ten bricks including mortar measuring 3.2 or 3.3 m, which gives a brick size of 31 × 31 cm to 32 × 32 cm. This is the small brick size commonly attributed to the reign of Nabopolassar or early in the reign of Nebuchadnezzar.

5.5 South–north Processional Way: Missing section

The German excavators found that the south–north Processional Way was missing for about 150 m south of the South Palace. After further Iraqi excavation of the street at the southeast corner of the South Palace around 1980, now about 180 m of the street cannot be seen (Figs. 5.20, 6.2).

In the south, there is a modern 1980s addition of side stones from the end of the preserved street up to the modern asphalt road; the direction of this modern section is wrong and it now looks as if the two sections of the street would not meet. The northern end is also cut as if the street was going to turn in the wrong direction, but the preserved bricks there have the correct alignment. Obviously, the heavy tree planting in the middle of the Processional Way caused problems for the modern planners (Fig. 5.20).

During the German excavations in 1902, Andrae laid out an excavation trench along the street all over the area where the street is missing. The trench, reaching down to −2.2 m, was mostly open from the surface, but under the modern street and in the north, it was in a tunnel (Fig. 5.9). The results of this detailed examination were unfortunately summarily published at such a small scale that many have overlooked the results. Until someone prepares a more detailed publication hopefully also with additional borings at strategic points in the terrain, the published simplified section is reproduced here (Fig. 5.21). However, the elevations given on the section are almost a metre too high in the south and too low in the north by almost the same amount, so the main text here should be used for more precise digits.

It is obvious that water flooding has removed the terrain, including all remains of

---

17 The elevations given at this point by Schmidt in Wetzel – Schmidt – Mallwitz 1957, pl. 18, should be corrected. They were a faulty 1930s attempt to correct Andrae’s original measurements, which however agree with renewed measurements.

18 Wetzel – Schmidt – Mallwitz 1957, 1–2, 27–29, pl. 18. The elevation problems were due to Langenegger’s use of another definition of the German elevation zero ±0.0 m. His measurements at the Ištar Gate were corrected before publication, but that correction was omitted for the street outside the South Palace, as a recent re-measuring by BDWG of the exposed remains of the street shows. The opposite was the case south of the missing part of the street, where Schmidt in the 1930s changed Andrae’s correct elevations.
any ancient street. What was interpreted as a possible shore (“Ufer” on Fig. 5.21) was noted on the south side. There is a large number of refilling layers in this area, in which a 2.8 m-wide canal with brick walls was constructed about 50 m south of the palace, and expanded to a 13 m-wide pool or harbour for some 87 m. The canal was dated by the German excavators to the Parthian period (Figs. 5.2, 5.9, 5.21, 6.2). If this is correct, the flooding that destroyed the area, including the Processional Way, would be dated to the Achaemenid or Hellenistic period.19

This was the place where, according to cuneiform texts, in Neo-Babylonian times the Libil-ḫegalla canal passed along the south side of the South Palace, and the palace is said to be next to that canal. Nebuchadnezzar built a bridge (titurru) over the canal so that the Processional Way could pass over.20 All this has been carried away by floodwater. The Nebuchadnezzar canal, 2.9 to 2.6 m wide, has been established from the river to the middle of the South Palace immediately south of the palace wall; its further alignment to

---

19 Wetzel – Schmidt – Mallwitz 1957, 23–24, pl. 12.
the east is a guess (Figs. 5.2, 6.2).

In the 1950s, a plantation of trees was placed in the lower parts of the terrain, where there was more water. The large, attractive trees, planted over the Parthian canal, unfortunately totally block the view of the Processional Way in its middle part (Figs. 5.20, 5.22).
5.6 South–north Processional Way: Outside the South Palace
The south–north Processional Way is attested archaeologically for some 170 m from near the southeast corner of the South Palace to the Ištar Gate. Iraqi excavations under the south section of the street around 1980 have shortened the remains to some 140 m. There must have been at least one, perhaps two, street levels, which are no longer preserved, above the current exposed one. These would agree with the two higher levels at the Ištar Gate (+13 m and +15 m), the one or two higher levels at the palace (+12 m and +13 m) and the upper level attested in the south. There are other street levels below the now exposed level (cf. Section 5.4).

The German excavations here, as in the nearby Ištar Gate, were supervised by Langenegger in 1905. The well-preserved middle street level was completely excavated only in the south. In the long middle section, excavation was limited to essentially a trench along the west edge of the street and five trenches across the street. The north part of the street next to the Ištar Gate was not excavated at all (Fig. 5.24). In the 1960s, Iraqi archaeologists unearthed the whole middle level of the street, which is now exposed for visitors (Fig. 5.25).\textsuperscript{21}

Langenegger used a different definition of the German elevation zero $\pm 0.0$ m. His measurements at the Ištar Gate were corrected before publication, but that was overlooked

\textsuperscript{21} Baqir 1961, 6–7.
Fig. 5.24. Processional Way, north and south of the Ištar Gate in the palace area. The Germans excavated only an upper level in the north, and cut trenches in the south to a middle level. The vaulted door of the South Palace, the Ištar Gate and the North Gate are marked (yellow). Photo: Royal Air Force, August 1923 (Excerpt from AP74, © UCL Institute of Archaeology).
for the street here. Even if it is difficult always to measure at the same points, a recent re-measure by BDWG of the exposed remains of the street show elevations about 85 cm higher than in the publication.

The first ca. 30 m of the Processional Way in the south was taken away by Iraqi excavators in the 1980s, in order to investigate a structure that was interpreted as a grave that had been dug down deep under the street level. The grave was discovered because in the area above it the baked brick paving of the street had been replaced with unbaked mudbrick (Fig. 5.23).22

Above this level, there were two more street levels at the Ištar Gate and to the north of it, beside the North Palace, as will be seen below. It is not known if that was also the situation all the way along the South Palace. Palace floors at +12 m and +13 m would require at least one corresponding street level and, at some point, either at the southern end of the palace or somewhat further north, there may have been a separation of one into two levels. All this has been taken away by brick miners and others. As can be seen at the Ištar Gate, there were also lower street levels of Nebuchadnezzar under the now exposed level. One of the street levels downwards, either the next one or the following, would have been at the bottom of the small vaulted gate at the South Palace at about +2.0 m. This street level was exposed during the Iraqi excavations around 1980.23

This section of the Processional Way is not straight, as in most other parts, but partly bent, creating a larger space in front of the main door to the palace (Figs. 5.2, 5.24, 6.2).

---

22 Damerji 2012, 68. This may be what the Germans registred as an altar of mudbrick.
23 According to information from Wahbi Abdul-Razzak.
The preserved brick pavement of the street is 10.2 m wide with 29 bricks in each row. Thus one brick, including mortar, measures 35 cm, and a brick itself about 33–34 × 33–34 cm, which is the standard Nebuchadnezzar size, in contrast to the somewhat smaller bricks in the exposed parts of the street in the south. The bricks on this level and on the higher level, or levels, were covered by stone slabs. In this area, as in the area north of the Ištar Gate, both large limestone blocks and somewhat smaller breccia blocks, often fragmentary (both types with Nebuchadnezzar inscriptions), were unearthed by the German expedition and later on also by the Iraqis. Remains in the north, in situ in a later level (treated below), indicate that the 105 × 105 cm large limestone blocks were placed in the middle of the street, with the 66 × 66 cm breccia blocks on either side of them (Fig. 5.26). The stone covering was always at the top of the uppermost level, and was moved upwards to the next level when the street was raised.

5.7 South–north Processional Way: Through the Ištar Gate
The south–north Processional Way continues through the 50 m-long double Ištar Gate (UTM 445780E 3600820N, Fig. 2.28). German archaeologists in 1902, with minor work in later years, excavated the upper level of the whole gate complex and made a detailed study at deeper levels in the northern front gate (Figs. 2.29, 5.28). In 1938, Iraqi excavators made the deep excavations in the southern main gate and subsequently prepared the gate for visitors (Figs. 2.29, 5.29), in 1959 adding central staircases leading down to the gate from the south and the north (Fig. 2.30). Details of the gate buildings have already been
Several street levels at the gate have been attested by excavations and cuneiform texts (Fig. 2.29). The main cuneiform text of interest here is the one written on the Nebuchadnezzar cylinders referred to above as found in a brick box at the street near the Nabû temple (Section 5.4). The uppermost street Level 1 at the Ištar Gate was at +15 m, the same elevation as the nearby North Palace. It belongs together with the blue-glazed brick gate with relief figures and has some of the original stones on a secondary reworked or repaired brick foundation made of fragments, not complete bricks (Figs. 5.26, 5.27, 5.28, 5.29 all with dark blue markings) discussed in Section 5.8. The next street Level 2 was attested north of the Ištar Gate (Figs. 5.27, 5.28 light blue) and still visible north of the North Gate (Fig. 5.36), as shown below. From the design of the Ištar Gate, it belongs to the version of the gate with blue-glazed bricks but no reliefs.

The street level that is best preserved today, Level 3, belongs (like all the lower levels)}
5.7 South–north Processional Way: Through the Ištar Gate

Fig. 5.28. Ištar Gate, from the south. Unexcavated main gate and excavated front gate, before the removal of the northern upper street levels. Level 1 (dark blue), Level 2 (light blue), and Level 3 (yellow). Photo: Koldewey, May 1907 (Bab Ph 1196s, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 5.29. Ištar Gate, from the south. Main gate and front gate. The stair to the upper level was built in 1939. Photographed before the removal of the upper street level in 1958 and the building of the downward stairs in 1959. Level 1 (dark blue) and Level 3 (yellow). Photo: DAI, 1957 (B Ph D 3, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
to a gate with reliefs but without glazed bricks. The street of this level can now be seen on both sides of the gate, and was preserved also through the gate, before excavations (Fig. 5.27 yellow). German excavations took away part of the street in order to expose the lower parts of the front gate in the north (Fig. 5.28), and Iraqi excavations removed the street within the main gate in the south (Fig. 5.29). The next Level 4 can presently only be seen as platforms on the modern staircases leading down to the modern level where visitors can walk and inspect the remains of the gate (Fig. 2.30 green). The still lower Levels 5 and 6 are covered by earth and lie beneath the modern groundwater level.

5.8 South–north Processional Way: Outside the North Palace

The south–north Processional Way continues north of the Ištar Gate alongside the North Palace (see Section 2.4). Here, we consider the street itself (Fig. 6.2). After being attested for some 240 m, the Processional Way continues further northwards into unexcavated areas outside the inner city walls but inside the outer city walls. The German archaeologists made the first excavations of the street as early as 1899 and had planned to complete the work in later years. Owing to the outbreak of World War I this never happened, and the detailed elevation measurements and drawings of the street were not finalised. The Germans exposed the south and middle parts of the upper main street Level 1 (Figs. 5.26, 5.27, 5.28, 5.29, 5.30, 5.31 all with dark blue markings). They also reported that at the top was a late, reworked horizontal upper level of brick fragments, here called Level 0. Due to lack of documentation, it has often not been possible in the
following to separate the sloping Level 1 from the later reworked horizontal Level 0 with brick fragments; next to the Ištar Gate they should join. It may be that the remains next to the gate should better be called Level 0 than Level 1 (Fig. 5.26). In 1958 Iraqi archaeologists excavated the south and middle parts of the street down to Level 3 (Figs. 5.27, 5.28, 5.29, 5.30, 5.33, 5.34, all with yellow markings), and in 1981 there followed further Iraqi exposure of the northern parts, at the North Gate and for 35 m to the north of it, down to Levels 1 and 2 (Fig. 5.36).

As brick miners had taken away the upper parts of all the baked brick walls, and had even dug several metres down under the surface for bricks, the German archaeologists found the remains of the street standing as a high ridge. The surrounding, originally much higher, walls of baked bricks were missing down to a depth of several metres below the street (Fig. 5.30, 5.31).

All known street Levels 1–3 have the same approximate slope up to the Ištar Gate. Detailed elevations of the upper levels north of the Ištar Gate have, with few exceptions,

---

27 Koldewey 1932, 37–39, pls. 24–27. As no detailed documentation has been found, if it ever existed, the separation between Levels 1 and 0 is problematic. The horizontal level in the drawing by Schmidt in Wetzel – Schmidt – Mallwitz 1957, pl. 18, said to be of Nebuchadnezzar, is wrong. It is the later, reworked horizontal Level 0 attested for some 35 m in front of the Ishtar gate and not the sloping Nebuchadnezzar Level 1 street.

28 Baqir 1961, 6; Al-Kassar 1985.
not been preserved from the German excavations. Also, the information from the Iraqi excavations is quite limited.\textsuperscript{29} New elevations taken by BDWG of the now exposed street Level 3 show a street with an approximately 3.0\% slope leading up to the Ištar Gate. Higher levels had about the same gradient, as shown below. All bricks in the exposed levels are sized ca. 33 × 33 cm or just above, which is the standard Nebuchadnezzar size. The upper street Level 1 (Figs. 5.30, 5.31) is attested at +7.5 m north of the North Gate (Fig. 5.36), sloping up to about +15 m at the Ištar Gate. The only measurement taken between these two locations was in the first year of excavation, at +12.5 m on the street beside triangulation point 2 (Fig. 5.31).

Based on the available evidence, we have a later reworked horizontal Level 0 consisting of brick fragments. Next to the Ištar Gate Level 0 joins the sloping Level 1. This Level 1 seems to have consisted of complete bricks on a foundation of baked brick fragments in asphalt, all covered with asphalt. A sand layer was added, and then thick limestone slabs were laid along the middle of the street, with smaller and thinner breccia stone slabs on either side of them. The stones were later moved upwards from Level 1 to Level 0 (Fig. 5.26).\textsuperscript{30}

From a contextual point of view, a dating of Level 1 to late in the reign of Nebuchadnezzar – in connection with his final extension of the palace area (Figs. 2.21–2.25) – would fit most of the evidence. This is the position taken here. It agrees with Koldewey’s interpretation and fits most easily with the available cuneiform evidence. The reported findings of some glazed bricks under Level 1 may indicate a later date, even if the great majority of glazed brick fragments were found above the Level 1 street by the German excavators, and only a more limited number appeared below it during later Iraqi work (and these bricks were then said to be from the Ištar Gate, perhaps from Level 2).\textsuperscript{31}

Level 2, about 2 m below Level 1, is well attested north of the North Gate with the top of the slight upward slope at +5.5 m (Fig. 5.36). It was also somewhat summarily documented for the area between the Ištar Gate and the North Gate, but was never properly studied (Figs. 5.27, 5.28, 5.30 light blue). No known evidence for the Level 2

\textsuperscript{29} Elevations are missing for the upper street Level 1 except next to the Ištar Gate in the main German publication: Koldewey 1918, pl. 1; Wetzel 1930, pl. 24; Koldewey 1932, 37–39, pls. 25–27. The only additional numerical evidence for Level 1 was from a measurement taken during the first year of the German excavation, shown on Koldewey 1901, 11, and Koldewey 1918, pl. 35, with the top of the triangulation point 2 as (+15.68) and the upper level of the Level 1 street beside it as +12.56, cf. Figs. 5.24, 5.31. This should be the same as +12.50 m in Koldewey 1925, 26; Koldewey 1990, 36. A combination of this measurement with new elevations of the two exposed street levels north of the North Gate (Koldewey 1932, pl. 24), analyses of German excavation photos, and notes from Iraqi excavations (Al-Kassar 1985) shows approximately the same slope also for the upper level.

\textsuperscript{30} Koldewey 1932, 37–39, pls. 24–27.

Fig. 5.32. Original sections of the west wall left behind by the brick miners. Cleaning before reconstruction with modern bricks between. Cf. the left red marking on Figs. 5.33, 5.34. Photo: Pedersén, March 2016.

Fig. 5.33. Processional Way north of Ištar Gate, before the final reconstructions of the walls. Level 1 (dark blue) and Level 3 (yellow). The upper street level in the foreground had been removed in 1958. The north part of the upper street still remained (dark blue) and was removed in 1981. Cf. Figs. 5.32, 5.34. Photo: K. Schippmann around 1980 (© Stefan M. Maul, Universität Heidelberg, Seminar für Sprachen und Kulturen des Vorderen Örients).

Fig. 5.34. Processional Way Level 3 (yellow) north of the Ištar-Gate, with the upper part totally removed. Reconstructions of the walls have original sections visible in the masonry (red markers). Cf. Figs. 5.32, 5.33. Photo: Pedersén, March 2016.
street has been reported inside the Ištar Gate, but the wall decoration there supports its existence.\footnote{Koldewey 1932, pl. 24, with excavation of this level in a 35 m-long tunnel from the north; Al-Kassar 1985; Pedersén 2018a.}

The now exposed and best-preserved Level 3 at the Ištar Gate continues in a northern direction from the Ištar Gate for about 180 m, where it is interrupted by the North Gate for some 30 m. North of that, for some 35 m, only the two higher street levels were excavated in 1981 (\textit{Fig. 5.36}). The 1980s Iraqi reconstruction of the walls besides the street of Level 3, following the interpretations of the German excavators, gives an idea of the original appearance of the area (\textit{Figs. 2.40, 5.34}). Original wall sections were conserved and are easy to recognise in the reconstructed walls (\textit{Figs. 5.32, 5.33, 5.34, all with red markings}).\footnote{Al-Kassar 1985.}

There were two North Gates on the Processional Way, both constructed between the walls along the street. A larger, deeper-founded gate of baked bricks was some 30 m long (UTM 445735E 3601035N). About 7 m south of this, another smaller, 8 m-long gate building of unbaked mudbrick was situated. The larger gate is here taken as the main North Gate. It was discovered by Iraqi archaeologists in 1981 and the remains can now be seen on the spot in Babylon. Only the south end of this gate had been traced previously by the Germans. Almost all the upper parts of baked bricks had been removed by brick miners. The lower part of the gate was built with baked bricks and bitumen, and the upper part with baked bricks and lime-gypsum mortar, just like the nearby North Palace, possibly suggesting a similar date. The foundation of the gate is cutting through the Level 3 street, blocking this street level. There are small remains of a possible Level 2 street inside the gate. All traces belonging to the probable Level 1 have been removed by brick miners.\footnote{Al-Kassar 1985; Pedersén 2018a.}

The smaller gate (UTM 445740E 3601011N) was built of unbaked mudbrick and, therefore, being of no interest to the brick miners, was found better preserved. Discovered by German excavators, it was completely excavated and taken away by Iraqi scholars in 1981 in order to expose the Level 3 street. It was found standing 90 cm above the Level 3 street.
street and preserved up to the Level 1 street, and seems to be cutting the foundation for that street. It is here assumed that the stone pavement of the Level 1 street passed over this gate. The 8 m-long gate building, which spanned the 20 m-wide street, had 2 m-thick walls spaced 4 m apart. It had a 4.6 m-wide door opening, like the Ištar Gate. It is here assumed that when the palace area was expanded and the Processional Way was raised, the mudbrick gate was originally constructed in connection with Level 2. Later on, it was replaced by the more substantial baked brick gate, linked with the glazed brick decoration of the walls beside the street in connection with Level 1.35

Besides the already mentioned stones in situ, either placed on original Nebuchadnezzar foundation or on a later version made of brick fragments, a number of more or less complete or fragmentary stones were found in the area. Limestone slabs of the size 105 × 105 cm and 33 to 35 cm thick (Figs. 5.26, 5.33), with inscriptions of Nebuchadnezzar stating that he adorned the Processional Way with limestone (aban šadi, mountain stone), were used in the middle of the street.36 On both sides of these were breccia stones, 66 × 66 cm and 20 cm thick, also with inscriptions of Nebuchadnezzar, this time stating that

35 Koldewey 1900, 2; Koldewey 1901 11; Koldewey 1918, pl. 35; Wetzel 1930, pl. 5; Al-Kassar 1985.
36 Koldewey 1901, 1–6, pls. 1–4; Langdon 1912, 198–199 Nebukadnezar 30; Weiershäuser – Novotny 2022, Nebuchadnezzar II 5, 6.
he adorned the street with breccia stones (*turminabandû*).\textsuperscript{37} When the street level was in use, the stones were placed in sand on top of the brick foundation covered with asphalt. When the street was raised, the stones were moved to a similar position on the new upper street surface. Nebuchadnezzar’s final version of the street in this area (Level 1) had the walls decorated with the famous glazed panels showing lions in relief (*Fig. 2.31*), which were later totally destroyed by brick miners. Fragments of these have been used for a reconstruction in Berlin (*Fig. 2.36*).

The 1,200 m attested south–north Processional Way, 800 m of which is attested in detail, had on the upper street level a covering of limestone and breccia as described above in Sections 5.4–5.8. Below the stones were layers of brick foundation. The southern ca. 700 m of the street consisted of 59 × 59 cm breccia stones, seven stones wide, with additional 1 cm mortar. An extra section of the street from the main Processional Way up to the main gate of the ziggurat area is attested (*Figs. 5.11, 5.12*). This makes about 9,000 such breccia stones. The northern 500 m of the street in the palace area, outside both the South Palace and the North Palace and through the Ištar Gate, had a top layer of 105 × 105 cm limestone paving stones (*Figs. 5.26, 5.35*) in the middle, and 66 × 66 cm breccia stones on both sides of those. Even if there is no definitive proof, the most probable option seems to be five limestones wide in the middle surrounded by four breccia stones on either side. This would give 2,500 limestones and 7,000 breccia stones. For the attested section of the south–north Processional Way this would mean a total of 18,500 stone blocks of three different sizes, possibly all, or many of them, with inscriptions. Such inscriptions on pavement stones from the Neo-Assyrian period were placed on the upper (or lower) surface, whereas the regular Neo-Babylonian placement was on one edge of the stone.\textsuperscript{38}

### 5.9 Streets in residential areas

German and Iraqi excavations have exposed and mapped more or less completely a number of streets in domestic areas in Babylon (*Figs. 5.2, 5.39, 6.2, 6.9, 6.10*). The German work was conducted chiefly in the Merkes area, with more excavation in the north and street tracing in the south. The results have been published together with the domestic buildings in the area.\textsuperscript{39} The later Iraqi work on streets in connection with their excavation of private houses in the Eastern Tell, in the area around the so-called Babylonian house, and in the old river in the south is planned to be published later. For streets inside the South Palace, see Section 3.2.

\textsuperscript{37} Koldewey 1901, 6–9, pl. 4; Langdon 1912, 40–41, 198–199 Nebukadnezar 30; Weiershäuser – Novotný 2022, Nebuchadnezzar II 7.

\textsuperscript{38} Weiershäuser – Novotný 2022, Nebuchadnezzar II 2 presents the gate Kasikilla as the end of Nabopolassar’s breccia pavement and the beginning of Nebuchadnezzar’s limestone and breccia pavement. The position of that gate has not been clarified.

\textsuperscript{39} Reuther 1926, 64–77.
Fig. 5.37. North Merkes, looking south. German excavation of the north–south “Mittelweg” (Middle Way) marked yellow. To the right, the reconstructed Ištar temple; behind it, on a higher level, the Iraqi excavation of Parthian houses. UTM 446050E 3600450N. For maps of the area see Figs. 5.39, 6.10 coordinates Merkes 24–25m–p, as well as Figs. 5.9, 6.9. Photo: Pedersén, March 2016.

Fig. 5.38. South Merkes, looking south. The remains of the German excavation of “Südstrasse” (South Street) can be found in the (now mostly flattened and refilled) series of small pits (yellow). In the foreground, an Iraqi excavation of a private house in the middle of a residential quarter. UTM 446180E 3600130N. For maps of the area see Fig. 5.39, coordinates Merkes 39–41s–v, as well as Figs. 5.9, 6.9. Photo: Pedersén, October 2017.
The aerial view of Merkes from 1923 (Fig. 5.9) showing the excavated areas can be compared with the map produced from the German excavations (Fig. 5.39) that had been finalised six years before, in 1917. Whereas the buildings and streets in the north were excavated from the surface in large pits to different levels, most of the mapped streets in the south were only traced by means of a large number of small pits following the layout of the streets. On the Neo-Babylonian level, these pits were connected along the walls beside the streets by means of tunnels. This permitted the production of a map of a large part of the streets in the area.40

The streets in the north part of Merkes, excavated together with the surrounded houses, are now visible as long, mostly straight cuttings in the terrain (Fig. 5.37). In the south, the small pits have successively been filled in from their side walls through natural processes, and latterly there has been additional refilling in order to prevent people falling into the holes. The surface of Merkes now has a series of shallow holes following the alignments of the Neo-Babylonian streets (Fig. 5.38).

The streets in the domestic areas were mostly unpaved. Exceptions with brick paving can be found outside some temples or in front of some rich private houses. The only street found with paving along its entire length is the Processional Way, as discussed above. Without paving stones on any longer stretch of the streets, the height and slope at any given time is very difficult to establish with available information. It is clear, however, that the exposed parts of the streets are in the highest, most elevated sections in Babylon. Most streets are several metres lower and even most Neo-Babylonian streets were much deeper than the lowest groundwater level during the Merkes excavations, which was −2.5 m, and they are now far below the present groundwater level at about +2.0 m.41

The short sections of excavated Old Babylonian streets are about 2.5 m wide between the houses, and a smaller lane is 1.5 m wide (Fig. 6.6).42 The short, exposed sections of Middle Babylonian streets are 4.0 m to 2.2 m wide (Fig. 6.8).43

The Neo-Babylonian streets and lanes in residential areas in Merkes (Figs. 5.39, 6.9, 6.10) were mostly between 6.0 m and 1.2 m wide between the walls of the houses. The “Untere Tempelstrasse” (German for Lower Temple Street) was wider at the entrance to the Istar temple, between 12 m and 10 m; in other areas it was about 6 m, but in sections in the east, it was only 3 m (Fig. 6.3). The “Ostweg” (East Way), the main north–south street in the east, was up to 8 m wide between the walls. The most exceptional exposed street width was 27 m to 17 m for the “Zikkurratstrasse” (Ziggurat Street) leading from the east to the main entrance of the ziggurat area, where it formed a large open space.44

---

40 Reuther 1926, 64–77.
41 Cf. e.g. Reuther 1926, 74–75, pl. 5.
42 Reuther 1926, pls. 3–5, 8, 9.
43 Reuther 1926, pls. 3–5, 11–16.
44 Reuther 1926, pls. 3–5, 17–20, 28, 33.
Fig. 5.39. Plan of the German excavations of Neo-Babylonian Merkes, showing streets and, in the north, selected private houses and the Ištar temple. Cf. Fig. 5.9 for an aerial view. Excerpt from Reuther 1926, pl. 2.
6 Babylon: Residential Buildings

Abstract
An overview of private houses in Babylon from German and Iraqi excavations, especially in the high areas of Merkes and nearby. The unearthed houses are chiefly from the Neo-Babylonian and later periods, but in the northern Merkes area there were excavations into late Old Babylonian and Middle Babylonian layers. The reconstructed houses are discussed.

6.1 Introduction
German and Iraqi excavations have unearthed some areas of private houses, including connecting streets and lanes (Fig. 6.2). Most of the documented private houses are on high ground in central Babylon, but there are also some in other parts of the city. Up to the time of writing, the great majority of areas containing private houses in Babylon have never been examined. This chapter is rather selective; several areas of private houses still await publication by Iraqi colleagues. This is especially the situation in areas in the Eastern Tell, in north Merkes, in the northeast of Merkes, to the northwest of the Nabû.

Fig. 6.1. Merkes. West–east section of House VI, seen from the south in northern direction. Four 7 x 7 m excavation pits from −2.0 m to +10.0 m elevation, each within a 10 x 10 m grid. For the placement of these pits see Figs. 6.6, 6.8, 6.10. Reuther 1926, pl. 3, excerpt.
Fig. 6.2. Centre of Babylon. The political and religious centre with the South and North Palaces, the Marduk temple and the ziggurat. On higher ground, residential areas with private houses, next to other temples, have been unearthed by German and Iraqi excavations. 100 m UTM coordinate grid on map. More details on Figs. 2.28, 6.9. Downloadable. Map: Pedersén.
Fig. 6.3. Merkes in the Neo-Babylonian period. West–east street, “Untere Tempelstrasse”, looking east. Zigzag walls of unbaked mudbrick. House VI is to the right, on the corner of the adjoining street, “Ostweg”. Cf. Fig. 6.10. Model: Pedersén.

Fig. 6.4. Brick layout of a Neo-Babylonian zigzag exterior wall. Whereas bricks in the walls follow the west–east and south–north directions, the street has a different alignment, leading to a zigzag exterior and staggered interior rooms. Reuther 1926, fig. 63, modified.

temple, and near the river in the south (Figs. 1.4, 6.2).¹

Most of the private houses unearthed in Babylon have been dated to the Neo-Babylonian, Achaemenid, Hellenistic and Parthian periods. Owing to the high modern groundwater, excavations in deeper levels were scarcely ever possible, except on higher

ground when the water level was exceptionally low. As explained in Section 1.4, for a long period during the German excavations the water level was several metres lower than normal, owing to a broken Euphrates barrage. This allowed the excavation of Old Babylonian and Middle Babylonian levels in some higher parts of the city, especially of private houses in the Merkes area. These excavations, in pits of ca. 7 × 7 m area and 12 m depth, within 10 × 10 m grids, provided profile sections for long stretches of north Merkes from the Old Babylonian (Ch), Middle Babylonian (ÄK, JK, MBA), Neo-Babylonian (NB), Achaemenid (Pe), Hellenistic (S), and Parthian (Pa) periods. The results were documented on a series of plans of Merkes for different periods (cf. Figs. 6.6, 6.8, 6.10), and a series of sections (up to 210 m long) of the same areas (cf. Figs. 6.1, 6.12, 6.13).2

Zigzag external walls are a fairly common feature in better Neo-Babylonian domestic buildings. They were even attested in the north exterior wall of the old level of the South Palace (see Section 3.2.1). The basic principle seems to be that the inner walls of well-built residential houses tend to be aligned east–west and north–south. Most streets do not

---

2 Reuther 1926, pls. 3–5, 8–9, 11–22, 28–33.
follow this scheme, but go in various different directions of the compass. If a house has a foundation, it is built along the street up to the street level. On top of the foundation, the walls are constructed with the bricks aligned, in principle at least, to the cardinal points. This north–south and east–west alignment may not be exact, but it is stricter than that of the streets. Several private houses have up to 10° west deviation, whereas the palace has perfect alignment. The result is a regular zigzag on the façades of external walls and a corresponding staggering of the walls on the inner side (Figs. 6.3, 6.4, 6.5).³

Private houses in Babylon are characteristically laid out around one central courtyard, but sometimes there are two or even more. As mentioned, the inner walls are regularly aligned north–south and west–east. The rooms surrounding the courtyard have door openings into the courtyard. The main or principal room is regularly positioned south of the courtyard, so that its door opening can stay in shadow most of the day. One room, often in a corner of the building, has a water outlet in the floor and bitumen covering on the brick paving and on lower sections of the walls. The usual interpretation is that it served as a bathroom. (See descriptions of individual houses below.)

The number of storeys in domestic houses in Babylon has never been proven. For the excavated areas with private houses on higher ground, the excavators assumed basically one storey with a possible room on the flat roof, an interpretation followed here. This may not be true for all never excavated areas.⁴

³ Reuther 1926, 83–84.
⁴ Herodotus 1926, Book I, 180, is known for claiming that houses in Babylon had three or four storeys.
6.2 Old Babylonian and Middle Babylonian private houses

German excavations in the Merkes area were supervised by Oscar Reuther in 1907–1908. In about 60 deep pits of 7 × 7 m, inside 10 × 10 m grids, several late Old Babylonian private houses were attested. None was completely excavated, but what was documented allows some idea of the layout of the houses, each arranged around a central courtyard.⁵

In the highest parts of Merkes, the attested late Old Babylonian levels may often be found at about −2.5 m to ±0.0 m, but from there these levels sink down in all directions into areas with lower, more usual elevations that remained impossible to reach even during the period of lower groundwater levels (Fig. 6.1).

Four houses were identified, three of them with remains of the courtyard (Hof). Archives with cuneiform texts were found in some of the houses (Fig. 6.6). The house with 450 clay tablets of the archive and library A1 belonged to the teacher Marduk-nāṣir. The house with 240 clay tablets of the archive A2 belonged to the businessman Kurû

---

⁵ Reuther 1926, 4–13, 41–49, pls. 3–5, 8, 9; Pedersén 2005, 17–68; Sternitzke 2015.
Middle Babylonian private houses have also been excavated in the same ca. 60 pits within the 10 × 10 m grids in the Merkes area, but on higher levels. Middle Babylonian is here used to include Kassite, Middle Babylonian and Assyrian levels according to the excavation report. None of these houses was completely excavated, but like the Old Babylonian houses they also seem to have been arranged around a central courtyard.\(^7\)

The attested Middle Babylonian levels may often be found at about −1.0 m to +4.0 m in this area of Merkes, and they descend in all directions from there into areas with the more normal, lower elevations beneath the present groundwater level (Fig. 6.1).

Three subdivisions of the period levels have been mapped; the plan of the middle level is shown here (Fig. 6.8). Three houses can be seen on the map, each arranged around a central courtyard (\textit{Hof}). In the houses, archives of clay tablets have been excavated (M4–M7). The house with the library M4 (which consisted of large tablets, some with drawings) belonged to some diviners (\textit{bārū}). The several hundred tablets in M6 are school tablets with excerpts from texts, copied by students. The tablets in M5 were the archive of the businessman Sîn-uballīṭ.\(^8\)

---

\(^6\) Pedersén 2005, 17–68.


\(^8\) Pedersén 2005, 69–108.
Fig. 6.9. German and some of the Iraqi excavations of Neo-Babylonian and later levels in the Merkes area and its surroundings, showing private houses, three temples, and part of the precinct around the ziggurat (at bottom left). 1 and 2 are daises; 3 and 4, pedestals; 5 and 6, altars; and 7, a well. 50 m UTM coordinate grid. For larger areas see Figs. 4.2, 6.2. Downloadable. Map: Pedersen.
6.3 Neo-Babylonian private houses

For the Neo-Babylonian period, the German excavation pits were extended to reveal the plans of complete houses in north Merkes. Iraqi excavations have revealed several additional complete houses. The results can be seen on a preliminary map (Fig. 6.9); temples are surrounded by domestic residences. This part of the city was mostly inhabited by the upper class, in sizeable houses. The street alignments in the area have been established as a result of the German excavations.

In different, often enlarged, parts of the streets next to temples, there were several brick constructions. In the limited area shown on the map (Fig. 6.9), some of these can be illustrated. Two daises with similar construction in unbaked mudbrick (1, 2), have been found, one by the Iraqi excavations, the other by the German. At least one of these stood next to a temple, and they could perhaps have been two of the many daises (parakku) attested in texts. There are two pedestals in baked brick (3, 4), one built in front of the
main entrance to the ziggurat (Fig. 5.14), the other at a street crossing outside the Ištar temple. Altars can be found in the street area outside the main entrances to the Nabû and Ištar temples (5, 6). Similar altars were also unearthed outside the Ninmah, Ninurta, and Išhara temples. Outside the small entrance to the ziggurat, a well (7) was established by Iraqi excavations beside the Processional Way.9

6.3.1 German excavations in Merkes
Neo-Babylonian private houses were excavated by Reuther in 1907–1908 in the same ca. 60 m-deep, 7 × 7 m pits in the Merkes area’s 10 × 10 m grids as the Old and Middle Babylonian houses, but on higher levels. In 1909, the Neo-Babylonian level was excavated between the pits to form complete plans of 13 houses (Figs. 6.2, 6.9, 6.10). All these houses were arranged around inner courtyards. Houses II and III had three courtyards; Houses IV and VI had two. The other 9 houses each had one single, central courtyard.10

In the highest parts of Merkes discussed here, the attested Neo-Babylonian levels may often be found at about +4.0 m to +8.0 m, and descend in all directions from there into areas with lower, more normal elevations. Following the series of pits in Merkes q2 in a northern direction, the Neo-Babylonian levels continue several metres below the

Fig. 6.11. Merkes, House III. The second-largest private house unearthed in Babylon, 1,500 m² in area. The principal room is 7.0 m wide. Reuther 1926, fig. 70.
deepest attested groundwater level, −2.5 m in Merkes 18q2 and 17q2 (Figs. 5.39, 6.10). This means that the Neo-Babylonian level here is below the attested late Old Babylonian level in the higher part of Merkes, as discussed in Section 6.2.11

Archives with cuneiform texts have been found south of the “Untere Tempelstrasse” (Lower Temple Street): Archive N10 in House VI with 36 tablets of Marduk-šuma-uṣur of the family Šigûa, the son of the governor; archive N11 with 49 tablets in two clay pots of Bēl-ušallim and other barbers; and archive N12 with 163 tablets of Iddin-Nabû of the family Egibi. In the other houses no clay tablets archives were found and, therefore, there is no information about the owners.12

In 1907–1909 German excavators unearthed the large House III, some 70 m southeast of the Ištar temple (UTM 446080E 3600400N, Fig. 6.11). First, the large deep pits in a

---

11 Reuther 1926, 3, 74–75, pl. 5.
west–east direction were excavated (Fig. 6.12), then subsequently the areas between the pits in order to expose the Neo-Babylonian level more completely (Fig. 6.13). The house was about 1,500 m² in area and is the second largest private house unearthed in Babylon, and the largest one found by the Germans. The house stands on a terrace with the lowest floor at +7.0 m. The terrace walls on the north, east and south sides served as the foundation for the external walls of the house. Inside the foundation was an infill of clayey earth about 1–3 m deep.\textsuperscript{13}

The exterior walls of the house had the zigzag façade so common in the period (Figs. 6.14, 6.16). These walls stood on the foundations at +7.0 m, but the inner walls

\textsuperscript{13} Reuther 1926, 98, pls. 3–4.
were erected on the terrace without foundations. The entrance door from “Winkelgasse” (Angle Lane) was 2.0 m wide. There were three courtyards (Hof) in the house. The main Courtyard 4 was 16.0 × 13.8 m, or 220 m², with the principal Room 12 measuring 16.4 × 7.0 m or 115 m². The courtyards, the rooms and the street outside the main entrance had three pavements of baked bricks. The first, with quite good 40 × 40 cm bricks, lay at about +7.5 m; a second, with 33 × 33 cm Nebuchadnezzar bricks, was just 5 cm above; and a third, with variously sized bricks, was at about +8.0 m, which is the same as the highest Nabonidus level of the nearby Ištar temple. Room 15, southwest of the principal room, was the bathroom, with a sewer and with asphalt covering the floor and the walls (Fig. 6.11). As no clay tablet archives were found in the levels of the house, we have no certain information about the owner. There was, during some periods, a connection to House II to the west on almost the same level.

House VI was a smaller but still sizeable house of some 330 m² (UTM 446070E 360430N). It was the immediate neighbour of House III to the north along the “Ostweg” (East Way), with the expanded “Winkelgasse” (Angle Lane) in between. The entrance to House VI was, however, on the other, northern side on “Untere Tempelstrasse” (Lower

---

14 Reuther 1926, 97–105, pls. 3–5, 17–20, 23c, 24a, 28, 33.
Temple Street), and it did not stand on a terrace like the larger house; levels of the same periods were on lower elevations. This house also had zigzag exterior walls (Figs. 6.3, 6.15, 6.16). The house was situated on the northern slope of the area of private houses, which means that the levels are essentially lower than those of the large House III, which stood on a terrace. A series of baked brick floors are attested between +4.4 m and +5.2 m, followed by a major raising up to +6.4 m (Fig. 6.1). The lower level of paving was made of 40 × 40 cm bricks, and the higher had 33 × 33 or 31 × 31 cm bricks. In the courtyard at +5.0 m, in the 20 cm between two floors, the remains of a cuneiform archive were excavated with the last attested date Nebuchadnezzar year 11 or 25. The next level west of the courtyard had a floor with Nebuchadnezzar and Nabonidus bricks. Courtyard 2 was about 6.5 × 6.5 m or 42 m² and the southern principal Room 4 measured 8.0 × 3.3 m or 26 m². Room 7 was a bathroom with a sewer and with asphalt on the floor, and Room 11, with remains of a fireplace, seems to have been used as a kitchen.

6.3.2 Iraqi excavations in Merkes

Around 1980, Iraqi excavations about 5 m west of the Ištar temple unearthed the third-largest private house found in Babylon so far, about 1,200 m² in area (UTM 445940E 360450N). The courtyard measured 12.5 × 10.0 m or 125 m²; on its south side was the principal room, 11.6 × 5.0 m or 58 m². The German archaeologists had previously excavated the surrounding streets and the façades on three sides of the building but nothing inside. They called the east street “Weg hinter dem Tempel” (Way behind the Temple) and the west street “Westweg” (West Way) (Figs. 6.2, 6.9, 6.10). At the east façade, they showed the existence of three main construction levels (Fig. 6.17). The Iraqi excavations identified an additional upper level, resulting in four levels from the top.

A house at a second, higher level at about +8.5 m contained a few clay tablets with documents dated to Darius I years 33 and 34. The main and best-preserved third level, at about +6.2 m, is Neo-Babylonian. This level of the house was reconstructed in the 1980s. The rebuilt walls are mostly of baked bricks on the remains of the unbaked mudbrick walls, but covered with mud plaster like a mudbrick house. On the plan here, the door to the main room, which was incredibly narrow on the published plan, has been adjusted according to the reconstruction (Figs. 6.9, 6.10, 6.17, 6.18, 6.19, 6.20). The lower, fourth level at about +5 m has been exposed only at the east façade, where the zigzag walls continued for several metres in a northern direction under the later street north of the house. There is no preserved north wall of the Level 3 house, because in Level 2, the north part was cut off and a large new house was constructed to the north of it, separated from it by a street (Fig. 6.18).

---

16 Reuther 1926, 110–113, pl. 3; Pedersén 2005, N10. There seems to be a minor disagreement about the findspot of the clay tablets between the text and the section in Reuther 1926.
17 Reuther 1926, pl. 22a–b, 28, 33; Al-Suba’ai 1985; Damerji 2012, 87–88, fig. 89a Neo-Babylonian, fig. 89b Achaemenid.
About 5.8 m west of the previous house on the other side of “Westweg”, Iraqi excavations unearthed another, somewhat smaller, house of some 450 m² (UTM 445910E 3600435N). On the west side of the house was the ca. 7 m-wide open space along the paved Processional Way (Figs. 6.2, 6.9, 6.10). On this side of the house were three doors, the two southern ones leading to small groups of rooms extending about 7 m into the house from the western façade: perhaps they served as shops. The northernmost door was the entrance to the main house. The two possible shops, each with three rooms, had no connection to each other or to the main building. These two entities each measured about 60 m², leaving 330 m² for the main house. The central courtyard was 8.5 × 7.6 m or 65 m² and to its south was a main room of 10.0 × 4.4 m. This house has also been reconstructed, mostly with baked bricks with mud plaster. The floor used for the reconstruction is at about +6.0 m (Fig. 6.21).
6.3.3 Iraqi excavations north of Merkes

The largest private house so far excavated in Babylon, of 44 × 43.5 m or 1,900 m², was situated on the top of a small hill some 300 m northeast of the Ištar temple, or 380 m east of the main entrance to the South Palace, in an area that in ancient times was called New Town (UTM 446200E 3600730N, Fig. 6.2, 6.22). In the Hellenistic period, the
Fig. 6.21. Merkes. Reconstructed house on the east side of the Processional Way. The third door (far left) is the entrance to the house; the other two may be to shops. Photo: Pedersén, March 2016, mud plaster redacted.

Theatre was erected 220 m east of this house. Around 1980, Iraqi archaeologists under the supervision of Ahmed Al-Bayati excavated the house and made reconstructions on the unbaked mudbrick walls with baked brick to a height of about 3.2 m above the foundations, in order to protect the original walls and display the house for visitors. Later modern infill makes the visible height of the walls inside the rooms about 2.7 m. The floor in the house used for the reconstruction has an elevation of about +7 m (the top of the earth before excavation was +9.1 m). This corresponds approximately to the highest Neo-Babylonian levels in the Merkes private houses. In modern times, the reconstructed house stands out north of the entrance way for visitors, dominating the scene (Fig. 6.23).

In ancient times, it was surrounded by streets and other private houses. The external walls have the common Neo-Babylonian zigzag feature, attested so often for mudbrick private houses, but also for the baked brick walls in the early version of the South Palace, as seen above in Section 3.2.1 (Fig. 3.8). First, a foundation was built following the alignment of the building plot. Then the whole house was constructed with some attempt at the usual north–south and west–east alignment, but this time not completely, only about halfway. As a result, the house has a zigzag façade and the inner walls have a different alignment from the outer wall (Figs. 6.22, 6.23, 6.24).

The main entrance had a 2.0 m-wide door opening. The courtyards and rooms had brick paving. There were two courtyards inside the house. The largest Courtyard 4 was $15.5 \times 16.5$ m or 250 m², with a 3.7 m-wide door opening through the 3 m-thick wall to

---

19 Al-Bayati 1985, Arabic section fig. 2.
Fig. 6.22. West of the theatre. Plan of the largest private house so far excavated in Babylon, 1,900 m². The main room is 6.5 m wide. Al-Bayati 1985, Arabic section 113, redrawn.

Fig. 6.23. The largest excavated private house, with the 44 m-long southern zigzag façade, reconstructed only 3.2 m high on the foundations. Photo: Pedersén, December 2018.
the main Room 24 on its south side. This room was 6.5 m × ca. 17 m, or about 110 m². Room 9 in the northeast corner was a bathroom.

A number of clay tablets were found in Room 32 in the northwest corner of the house. Some of the tablets date to the reign of Nebuchadnezzar, others perhaps to Darius. It may be possible to establish the identity of the owner of the house by means of the cuneiform tablets found here, but, so far, they have not revealed any published information about the persons living there.
7 Babylon: Late Buildings

Abstract
An overview of the late building structures of new types in Babylon, chiefly from the Hellenistic, Parthian, and Sasanian periods. Attempts are made: to distinguish different building phases, using German and Iraqi excavations combined with cuneiform and other ancient texts; to relate these to the remains now to be seen in Babylon; and to give reasonable interpretations.

7.1 Introduction
Whereas several of the buildings discussed in previous chapters continued to be used and rebuilt in the Hellenistic and Parthian periods, some quite distinctive, more or less “new” types of constructions were introduced in later periods. Some late, large buildings and constructions in Babylon can be dated to the Hellenistic, Parthian and Sasanian periods, even if more precise dating often may be difficult. The date may also span over more than one of the periods. Work on most of them was begun during Koldewey’s excavations, and continued during later German and Iraqi excavations.

As far as possible, the levels and preliminary datings will be established. There will also be an attempt, whenever possible, to provide reasonable interpretations of the excavated structures, including their function and appearance.

7.2 Hellenistic and Parthian theatre
Felix Langenegger, assistant to Koldewey, excavated the theatre (UTM 446490E 3600730N) from 16 January to 21 March 1904 in the area of the northeast inner city that was called New Town in ancient times (Figs. 2.1, 2.2). Arnold Nöldeke drew the plans and sections (Figs. 7.1, 7.2). No description of the excavations has been found to support the publications, which appeared years later. The results were prepared for publication by F. Wetzel and E. Schmidt in the early 1940s with a preliminary presentation.¹ The final manuscript was, to a considerable extent, destroyed during World War II. After the war, the manuscript had to be redone, and the section about the theatre was completely

¹ Schmidt 1941.
rewritten by A. Mallwitz, who had no excavation documentation available except an original recording plan and two sections. The historical reconstructions by Mallwitz were more in line with the scholarly consensus of the historical development of the theatre than what Schmidt had produced previously. The final publication was printed in 1957.2

The theatre was constructed in the southwest part of the Homera hills, which according to the German excavators essentially consisted of fills from the demolition of the ziggurat before its planned rebuilding (see Section 4.3.2).3

The theatre had the usual Greek Hellenistic layout (Fig. 7.2): a **theatron** (Greek: θέατρον, place for seeing) comprising semi-circular seating space for people; an orchestra (Greek: ὀρχήστρα, dancing place) where the chorus and actors performed; and a **proskene** (Greek: προσκήνιον, “stage” in our sense) in front of the **skene** (Greek: σκηνή, a wall on the back of the stage with doors), the scene wall. Later, possibly in the Parthian period, a **palaestra** (Greek: παλαίστρα, wrestling school) was added in the area

---

2 Mallwitz 1957 as part of Wetzel – Schmidt – Mallwitz 1957.
Fig. 7.2. Theatre. Upper Parthian Level II of the orchestra at +5.5 m. Photo: Koldewey, March 1904 (Bab Ph 629, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 7.3. Theatre. Orchestra upper Level II +5.5 m and cuttings down to lower Level $I_2$ +4.1 m. Palaestra ruins covered by vegetation. Photo: DAI, 1957 (B Ph D 7, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).
Fig. 7.4. Theatre. Orchestra lower Level I₂ +4.1 m. Skene and proskene foundations cleaned, palaestra ruins covered by vegetation. Photo: DAI, around 1960 (B Ph D 23, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 7.5. Theatre. Reconstructed in the 1970s and 1980s as a Level II Roman-Parthian theatre on the elevation of Level I₂. Photo: Pedersén, October 2015.
behind the skene, with an open courtyard for training in combat sports in the centre, and rooms for discussions in the side areas.\(^4\)

From 1956 to 1958, the director of the Baghdad branch of the German Archaeological Institute (DAI), H. Lenzen, who had assisted during the preparation of the publication of the theatre, conducted new excavations in the theatre in order to clarify a number of remaining problems (Figs. 7.3, 7.4). The results were never fully published. Then followed additional Iraqi excavations and large-scale reconstructions in the 1970s and 1980s: first the mudbrick foundations were cleaned and strengthened, then a modern brick structure (red coloured cement bricks with the same dimensions as the ancient one) was placed upon them in order to prepare the theatre to be used for modern cultural performances (Figs. 7.5, 7.6).\(^5\)

The German publication interpreted the theatre as a Hellenistic construction with three construction phases, called in the publication I\(_1\), I\(_2\), and I\(_3\), followed by a Parthian main reconstructed phase II.\(^6\)

According to Mallwitz in the German publication, the orchestra had three different floor levels: +4.1 m (4.065) for construction phases I\(_1\) and I\(_2\); +4.45 m for phase I\(_3\); and +5.45 m for phase II. The previous study by Schmidt recognised only two main levels, +4.2 m to +4.3 m and +5.3 m. In the façade drawing of the skene and proskene in the publication by Mallwitz, levels I\(_1\) to I\(_3\) have typically Hellenistic traits, with a high proskene and three large openings in the skene; on the other hand, Level II is there reconstructed in Roman style, with a low proskene and three door openings in the skene, of which the middle one is larger.\(^7\) In the seating space, a platform for distinguished persons, a prohedria in the German publication, also called bisellium, was constructed

---

\(^6\) Mallwitz 1957 as part of Wetzel – Schmidt – Mallwitz 1957.
\(^7\) Wetzel – Schmidt – Mallwitz 1957, pl. 10.
in phase I and rebuilt in phase II. Only the lowest section of the semi-circular seating space, Greek *theatron* or Latin *cavea*, was preserved and possible to excavate. The lower part of the outside of the seating space is preserved, and when this is combined with the slope of the seating area, a preliminary height can be calculated.\(^8\)

A limestone plaque, sized 21 × 17 cm, bearing a four-line Greek inscription with the ends of the lines broken away, was found in the northwest part of the courtyard of the *palaestra*. The inscription records how Dioskourides built or rebuilt the theatre and the *skene* (Fig. 7.7). The only clues to the dating of the inscription are the forms of the letters, which according to the German publication indicate a date of the 2nd century. If this is correct, it may be the date of the Parthian rebuilding phase II, if it is not just a report of a minor repair.\(^9\)

The large *palaestra* building was situated behind the *skene* and was only constructed in connection with theatre phase II, dated by the German excavators to the Parthian period. According to the excavators, it had an assumed floor level at +4.9 m in the courtyard, but that was called in question in the publication. Such a building basically served as a wrestling school, but over time was used for additional purposes. In the centre of the *palaestra* was a central courtyard, which was surrounded by roofed colonnades (Figs. 7.8, 7.9).\(^10\)

The theatre in Babylon is also known from a series of contemporary cuneiform texts, studied especially by van der Spek. It is called *bīt tāmarti* (É *ta-mar-tú*, É IGI.DU₈.A) the “house of observation”, the same meaning as Greek *θέατρον*. According to cuneiform

\(^{8}\) Mallwitz 1957.

\(^{9}\) Schmidt 1957 in Wetzel – Schmidt – Mallwitz 1957, 49–50.

\(^{10}\) Mallwitz 1957.
Fig. 7.8. Theatre. Reconstructed palaestra from the southwest. A palaestra was a wrestling school with a central courtyard surrounded by colonnades. Photo: Pedersén, January 2018.

Fig. 7.9. Theatre. Inside the reconstructed palaestra, from the east. Southern colonnades with courtyard to the right. Photo: Pedersén, October 2015.
texts, especially the so-called Astronomical Diaries from the Hellenistic to the early Parthian periods, 162 BC–83 BC, the theatre also served as the assembly place for Greek citizens, where official addresses on parchment (giṭṭu, KUŠ.GÍD.DA) from kings and governors could be read out. Messages to the Babylonians were instead read in the house of deliberation (bīt milki) in the Juniper Garden (kiri burāši, gišKIRIŠ ŠEM.LI), a not yet identified place somewhere south of Esagil in modern southern Amran.\footnote{Van der Spek 2001.}

7.3 Parthian colonnaded street
About 7 m above the Neo-Babylonian west–east street between Esagil and Etemenanki, there was a Parthian street with a long row of columns on its south side (UTM 445610E 359850N, \textit{Figs. 2.2, 6.2}).\footnote{Wetzel – Schmidt – Mallwitz 1957, 32–33, pl. 16. Wetzel 1938, pl. 2, shows what is probably the correct direction of the walls, which agrees with the description in Wetzel – Schmidt – Mallwitz 1957, whereas the direction of the walls on Wetzel 1938, pl. 1, can hardly be correct.} The street was unearthed on the northeast of the Amran mound and at the bridge over the old Euphrates on the west side. Under the high northwest ridge of Amran, in a northern direction, there has been no excavation, but a continuation here
Fig. 7.11. Parthian colonnaded street at +9 m, looking west. Over a distance of 200 m, two sections of a west–east street are attested. On the south side of the street, there were columns. Cf. Fig. 7.12 for a reconstruction. Photo: DAI, 1960s. (B Ph D 1014, © SMB Vorderasiatisches Museum, Deutsche Orient-Gesellschaft).

Fig. 7.12. Parthian colonnaded street. The 3.5 m-wide street, running west–east, had a 2 m-thick external wall on the north side, and on the south side a row of columns with roofed areas inside, perhaps for shops. All walls are of plastered, unbaked mudbrick; the columns are of baked bricks. Model: Pedersén.
seems probable, and this would make the street at least ca. 200 m in length. South of the street, a large Parthian private house was exposed with several levels. In Room E of that house, a large number of broken precious objects from the Marduk temple was excavated at +8.0 m (Figs. 5.6, 7.10).\textsuperscript{13}

German excavations were conducted by Wetzel in 1909. In the 1960s, there were renewed German excavations by Lenzen in the same area, attempting to clarify the links between this site and the ziggurat. The main remains consist essentially of the lower parts of a long row of baked brick columns. On the north side of the colonnaded row lay the remains of a 3.5 m-wide street. The opposite northern side of the street consisted of a 2 m-thick unbaked mudbrick wall, assumed possibly to have served as an outer wall of the Amran area. On the south side of the columns were rooms covered by a roof resting on the rear walls and on the columns. They may have been used as shops (Figs. 7.11, 7.12).

7.4 Large Parthian building
North of the old inner city, next to the river, in what since the 1980s has been called the Eastern Tell, a German expedition of 1967–1972, directed by Jürgen Schmidt, excavated inside a large Parthian building (UTM 445660E 3601360N, Figs. 1.4, 2.2, 7.13, 7.14).

If the Neo-Babylonian Processional Way went straight ahead for some 230 m in the unexcavated area north of the excavated stretch, it would have run approximately on the east side of this large building, or rather of an earlier version of it. Owing to the groundwater, only Parthian and later walls could be exposed, mostly in the interval of about +3.5 m to +6.5 m. The east part of the building was excavated for some 160 m without finding its south and north walls. The building, which had outer walls about 2.6 m thick, had the appearance of a large storage construction. \(^\text{14}\)

The excavator had been looking for E-siskur, the New Year temple, \textit{bīt akītu}, expected to be outside the inner city wall alongside the Processional Way. This temple was rebuilt by Nebuchadnezzar with baked bricks. \(^\text{15}\) The temple, or at least a later version of it, partly in mudbrick, existed at least until the year 80 BC according to the Astronomical Diaries. \(^\text{16}\) Such a baked brick building was not found during the excavations, but, of course, the possibility cannot be excluded that the excavated remains were part of a later precinct around such a temple. However, all known sacral buildings in Babylon, including the precinct around the ziggurat area, have projections and recesses on all


\(^\text{15}\) Langdon 1912, 128–129 Nebukadnezar 15; Weiershäuser – Novotny 2022, Nebuchadnezar II 2.

façade walls, and these are hard to find on the east side of the eastern outer wall of the building here. So far, there is no proof that a temple stood here; therefore, it may be wiser for the time being not to talk of such a temple in this building compound.\(^\text{17}\)

7.5 Sasanian fortification above the ziggurat ruins

At one point, possibly during the Hellenistic period, the upper parts of the ziggurat were taken away as described in Section 4.3.2 (UTM 445640E 3600040N, Fig. 6.2). According to the interpretation of J. Schmidt, a fortification of unbaked mudbrick with rounded towers was erected on the remaining brickwork of the ziggurat at about +2.0 m sometime in the Sasanian period, or perhaps even earlier in the Parthian period.\(^\text{18}\)

The first German excavations at the ziggurat in 1913 concentrated on the remains of the mantel of baked brick around the mudbrick core. Renewed German excavations in 1962 were conducted in order to clarify the interpretation of the remains of the core and the structures above it (Fig. 4.15). Before the removal of the lower parts of the baked brick mantel in 1886, both mantel and core were probably preserved at the same level. It was on the mantel of this level that the Sasanian fortification was erected (Fig. 7.15). As the underlying mantel had been removed before excavations, our understanding of the fortification walls standing on them is essentially based on the finds on the top of the core, and through comparisons with similar fortifications of the period, for which see the following section.

\(^{17}\) Kose 2004.
7.6 Sasanian fortification above the Summer Palace ruins

The German excavations in 1914–1915 and the later Iraqi work around 1980 were conducted on the Summer Palace of Nebuchadnezzar (see Section 3.7), but work also included the later layers above the palace (UTM 446000E 3603280N, Figs. 1.4, 2.1, 2.16).19

---

Fig. 7.18. Sasanian fortification with unbaked mudbrick walls, ca. 180 × 180 m, covering the ruins of the Summer Palace. The old embankment was in ruins at this time and the ancient river may have moved westwards. Model: Pedersén.

After the area was used for graves during the Parthian period, a major rearrangement occurred in the Sasanian period, or perhaps even earlier in the Parthian period. In this rearrangement, the palace area was transformed into a fortification, of about 180 × 180 m, with massive mudbrick walls and half-round towers. Some of these late walls are still standing high, as they were made of mudbricks that were of no interest to the brick miners (Figs. 7.16, 7.17). The unbaked mudbrick walls on the west and south sides had their foundations at about +8.0 m; on the other sides they were standing on the high remains of the baked brick palace walls. The floor has not been preserved, but may have been near the modern preserved surface at around +25 m.

The remains of the large Sasanian fortification were best attested on the west side, with the large rounded towers at the corners and smaller rounded towers along the wall. The west wall was constructed outside the remains of the old palace and also outside the old (and at the time probably ruined) embankment. The river may by that time have changed direction, possibly to the new channel documented a few hundred metres to the west (Fig. 7.18).²⁰

²⁰ Wetzel – Schmidt – Mallwitz 1957, 24–25, pl. 13; Reade 1999, 57–63 with reference to the engraving showing the west wall of Babil by Rich 1839, figure opposite p. 68.
8 Babylon: Discussion and Conclusions

Abstract
Some general principles and trends from the previous chapters, related to the buildings treated above, are summarised and discussed.

8.1 Introduction
The previous chapters have attempted to bring the German and Iraqi excavations in Babylon together into an understandable unit, despite the varying circumstances of these dissimilar fieldworks and the different decades in which they were conducted. The excavation results have been compared with the present state of the ruins in Babylon. When a reconstruction has been created on the ruins, the present volume has attempted to distinguish between the ruins and the modern additions. Cuneiform and other ancient documents have been drawn upon, in order better to understand and date buildings and levels. A digital architectural model of the city has been used to analyse the feasibility of the interpretations and to create interpretative digital reconstructions of the known parts of Babylon.

The German local elevations have been used for all levels, and this can easily be recalculated according to the Iraqi standard above sea level by adding 25.5 m to any German elevation. A new UTM based coordinate system (WGS 84 / UTM zone 38N) for the complete Babylon site has been used for all buildings in connection with the digital model, but the old German local coordinate systems have also been presented when available. Future work may refine the used coordinates with some transfer of all coordinates in the same direction. There are several local adaptations of coordinate systems in use making it important always to specify system details and compare coordinates for control points.

Owing to the massive programme of building activity when Babylon was the capital of the Neo-Babylonian empire (625–539 BC), and especially during the reign of Nebuchadnezzar II (604–562 BC), many of the constructions treated here date to that period. Having looked at some of the world-famous buildings and constructions – such as the enormous city walls, the palaces with the Hanging Gardens, the temples with the great ziggurat at the Marduk temple, and the Processional Way passing through the
Ištar Gate in the city wall – we can now consider some general trends relating to their construction, including their decoration as well as the elevations of buildings and streets. Certain basics have already been given in the Introduction (see in particular Section 1.6, Building materials), and more information has been added in several places in the subsequent chapters. Some conclusions will be drawn here, and some additional statistics (especially from the German excavations) will also be provided.

One of the best ways, or perhaps even the very best way, to preserve something for the future would be to cover it and perhaps build a structure above it, something new that does not destroy too much of the old that lies below. Some important examples of this principle were uncovered during excavations in Babylon. Buildings and streets were raised or constructions moved sideways, and these changes protected some structures, façades, and surfaces, which in other circumstances would not have been so well preserved, or not preserved at all.

The double mudbrick city walls, and even the double baked brick embankments between the South and the North Palace near the Ištar Gate, were found standing high and in extraordinarily good condition compared with other sections of the walls. When the North Palace was constructed outside the old city, the city walls there no longer had any protective purpose and may have been more or less completely infilled and levelled at a high elevation, resulting in the preservation of the walls to that height (Sections 1.5.2, 2.3, Figs. 1.11, 1.12).

Several of the temples had their floor level raised considerably, which was especially due to raised street levels nearby. This was mostly accompanied by the addition of an outside strengthening wall, a kisû. The Nabû temple and the Ištar temple were rebuilt on higher levels. Between the old and the new floors, there was rather well-preserved white lime-gypsum wall-plaster with black bitumen decoration (Sections 4.5, 4.6). The situation was similar for the Ninmaḫ, Ninurta and Išḫara temples (Sections 4.8, 4.9, 4.10).

The Processional Way north of, south of, and (before excavation) even within the Ištar Gate had a very well-preserved Level 3. This is now exposed on both sides of the gate, although it has been cut through at the gate itself by archaeological excavations. The level is so well preserved because it may have been very soon filled in with more earth, in order to raise the street level again. It was not important enough to be mentioned in the cuneiform text about the raising of the street, but because it was so little used and then infilled, Level 3 was well preserved and became – from an archaeological point of view – significant (Sections 2.4, 5.6, 5.7, 5.8, Fig. 2.29).

The bridge over the Euphrates was originally 126 m long. It was subsequently (either late in Nebuchadnezzar’s reign or during that of Nabonidus) reduced to 110 m through the addition of another embankment on the east side of the river. The first pillar west of the east abutment then served as the new abutment, and in the area between the two, only briefly used, the façade of the pillar was much better preserved than elsewhere under the bridge (Section 5.2, Fig. 5.5).
8.2 Construction materials

The most common building materials (Section 1.6) were based on clay or mud, either in the form of unbaked mudbricks, mud mortar and mud plaster, or as baked bricks. Even if one type of material dominated, there was almost always a combination of different materials, both those based on clay, and others. Most building constructions in the area were traditionally made of unbaked mudbrick. This was the case for private houses, city walls, temples, palaces, and other official buildings from the Old and Middle Babylonian periods until the Parthian and Sasanian periods. There were always exceptions: all constructions in contact with water (namely, floors, streets, embankments, water canals, channels, and wells) had to be of baked brick. We have very little information about the 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-quality baked bricks instead of unbaked mudbrick. The palaces were completely rebuilt with baked bricks, as was the Ištar Gate. The strengthening, underground side walls, the kisû, were also regularly made of baked bricks even for mudbrick buildings. Even temples started to be rebuilt with baked bricks (Section 4.5). Bitumen was used as mortar for baked brick constructions, at least in the lower parts of buildings. In the upper parts, lime-gypsum mortar was more common later in the reign of Nebuchadnezzar. The baked bricks, especially those of Nebuchadnezzar, were of good quality and, owing to the types of mortar mostly used, it was possible to get them out of the walls. Most of these baked brick walls were taken down by later brick miners and the bricks reused elsewhere on a large scale. Baked bricks with decoration, in the form of reliefs and glazing, are treated in Section 8.4.

The baked bricks in Neo-Babylonian Babylon were essentially of two sizes. The smaller bricks were 31 × 31 cm and the larger were 33 × 33 cm (Section 1.6). The smaller must be older, as they were found in the lower parts of constructions with the larger ones above them. The larger bricks were regularly stamped with Nebuchadnezzar inscriptions, and their production must be dated to his reign. The smaller are usually without inscriptions; a very limited number of such bricks (and only in the embankments) bear inscriptions of Nabopolassar. The German excavators considered the small, uninscribed bricks to be either from the reign of Nabopolassar or the early part of the reign of Nebuchadnezzar. In the previous chapters (Section 3.2.1) such bricks in the South Palace have been treated as early Nebuchadnezzar, as that better agrees with contemporary royal inscriptions; this is not Koldewey’s preferred interpretation, but his alternative.

Hundreds of millions of unbaked mudbricks and a similar quantity of baked bricks were used in building construction in Babylon; only some main groups can be mentioned here. In Section 2.7, it was calculated that ca. 210 million unbaked mudbricks and ca. 275 million baked bricks were needed for the attested sections of the city walls, excluding the walls surrounding the palaces. The Ninmaḫ temple (Section 4.8) can be seen as a rather typical Neo-Babylonian temple. On the upper level, the temple walls below and above the
surface consisted of 1,240,000 unbaked mudbricks and had an underground kisû made of 507,000 baked bricks. The visible part of the temple above the surface consisted of 520,000 unbaked mudbricks with, in addition, a floor of 16,500 baked bricks. In Section 4.2, the walls of the Marduk temple in the latter part of the reign of Nebuchadnezzar were calculated to contain 5,800,000 mudbricks standing on a foundation platform of 428,000 mudbricks. The main building was supported beneath the ground surface by a small kisû of 173,000 baked bricks. The visible part of this temple above the surface consisted of 4,700,000 unbaked mudbricks. In Section 4.3.3, the ziggurat in the same period consisted of a lower core of 8,700,000 unbaked mudbricks; around it was a mantel and on top of it were upper platforms constructed with 30,200,000 baked bricks. In Section 3.6, a calculation showed that the attested walls of the central palace area needed 137,000,000 baked bricks for their construction. The large terraces of brick and all the floors have not been considered in this sum.

The majority of the baked bricks were regular Nebuchadnezzar bricks, many of them with inscriptions, mostly stamped. Most of the inscriptions were on the bottom of the brick (as placed in the wall). Even though most of the walls were removed before excavation started by brick miners and used for constructions elsewhere, huge amounts of bricks still exist in the wall remains and nearby in Babylon. The German excavators registered a small selection of 1,190 baked bricks, mostly in the form of brick fragments, with inscriptions of which 1,147 have been identified: 906 bricks are of Nebuchadnezzar, 107 Nabopolassar, 37 Assurbanipal, 30 Neriglissar, 25 Esarhaddon, 19 Sargon, 13 Nabonidus, 9 Amēl-Marduk, and 1 brick of Adad-apla-iddina. Owing to the groundwater level, the excavators could not dig deep enough to reach any older bricks. There were mostly a few of each main type of brick inscription.

Two types of bricks of Nebuchadnezzar were placed so as to be visible in the walls of the South Palace. One type of inscribed brick has what the German excavators called the “main inscription” (Hauptinschrift). Of this type alone 533 exemplars, mostly fragments, were collected and registered. Another similar-looking type of brick with inscription is the so-called “Lebanon inscription” (Libanoninschrift), with 133 registered exemplars. The main inscription concerns the construction of the deep foundations and the walls of the South Palace with baked bricks and asphalt. The Lebanon inscription deals with the roof, with beams of cedars from Lebanon. These two types of bricks were placed, regularly spaced, and with the inscriptions visible, in the walls of the Nebuchadnezzar’s South Palace. This was imitated in the 1980s reconstruction of the palace, when bricks with an Arabic inscription of Saddam Hussein were similarly placed in the reconstructed walls.

As there is no stone in the immediate area of Babylon, all stone found in the city must have been transported from elsewhere. Limestone and breccia are the construction stones most commonly attested in Babylon. An easy way to transport them would have been by boat on the Euphrates. The sources of most stones have, so far, not been found. There are many examples of reuse of stones for other than the original purposes. Large quantities of stone were taken to Babylon in order to be used as pavement slabs on the
Processional Way (Figs. 5.26, 5.27, 5.28, 5.29, 5.33, 5.34, 5.35). The excavated 1,200 m south–north section of this street was paved throughout. The 700 m-long southern section was covered with 9,000 breccia paving stones almost 60 × 60 cm in size. The 500 m-long northern section was surfaced with 2,500 limestone paving stones of ca. 105 × 105 cm, surrounded on both sides by 7,000 breccia stones of ca. 66 × 66 cm (see Section 5.8). Remains of stone pavements have been found in the palaces. The archaeologists considered that the two courtyards of the North Palace had a covering of stone (Section 3.3.3). Some 5,600 stone slabs of 66 × 66 cm each would have been required (Fig. 3.33). The large number of fragmentary stone slabs found in the Summer Palace suggests that the two large courtyards there were paved in stone; 6,430 slabs of 66 × 66 cm would have been required (Section 3.7).

A total of some 1,500 huge stone blocks, often about 2 × 2 × 0.75 m, protected the lowest ca. 5.5 m of the north external wall of the North Palace (Figs. 1.7, 3.23; Section 3.3.1). Pivot stones were used for doors; however, these are mostly not preserved in the original locations but reused elsewhere. In brick walls, stone blocks were sometimes used to cover the top of openings (Fig. 3.29). In common buildings, it is often possible to see repurpose of stones that had been originally intended for official constructions, but had been broken.

Many, or perhaps even all, of the Neo-Babylonian pavement stones had a royal inscription on the edge. These are often still possible to see on limestone but more difficult to make out on breccia. A total of 397, almost all fragmentary, pavement stones with inscriptions were registered during the German excavations. Among these, so far 330 have been assigned to kings: 322 Nebuchadnezzar, 4 Amēl-Marduk, perhaps 2 Nabopolassar, 1 Sennacherib, and 1 Adad-nirari II.

Most of the stones used in the buildings have been taken away and reused elsewhere leaving only a large number of mostly small fragments and a few larger more complete stones. The quite numerous limestones cannot only be reshaped for other purposes but also by means of heating be used to produce lime. The lime being used for construction in many types of new buildings until today.

Other construction materials, such as wood, have not been so well preserved. Cuneiform texts refer to cedar logs for the constructions of roofs, for doors, and for strengthening of other constructions. For the extremely wide (17.5 m) throne room in the South Palace, it was calculated in the 1960s that cedar balks of 35 × 75 cm at a minimum spacing of 60 cm would have been required to hold up the roof (Section 3.2.4). This would have been at least 55 such balks, possibly about 100 were used. Whereas roof constructions have scarcely been preserved when not burnt (Section 4.6), the strengthening of brick constructions can be seen in several places in the ruins in the form of voids in brickwork, where wooden logs (no longer preserved) once held the construction together (Figs. 2.26, 6.5).
8.3 Building structure

A normal, well-built private house of unbaked mudbrick often had walls that were three bricks or 1.0 m thick. It has here been assumed that the walls of such a house would be about 3.0 m high below the roof (Section 1.5.2, Chapter 6), but about 4 m would also be possible. Walls for larger private houses, and other buildings such as palaces and temples (not forgetting the city walls), could be much thicker and probably, therefore, higher. A proportion of 1:3 between thickness and height has been assumed here as a main working hypothesis, with some variation; baked brick walls could be somewhat higher. Equally, walls might be proportionally lower when they had to resist sideways pressures (as for embankments) or were intended for purposes of defence (as for city walls).

Thicker walls were sometimes constructed as two, or sometimes even more, separate joined walls. The city walls were constructed of unbaked mudbrick some 6.5 m and 3.7 m thick, plus embankments of baked brick of about 2.3 m, expanded during Nebuchadnezzar’s reign by some additional 3.3 m. The total width of the inner city wall complex was 40 m, including the spaces between the different walls. The outer city wall consisted of an unbaked mudbrick wall 7.0 m thick, plus a baked brick embankment 7.8 m thick with an additional 3.3 m embankment, i.e. a total thickness of 11.1 m. The total width of the outer city wall complex was 30 m, including spaces between walls (Section 2.3).

The West Fortification had 21 m-thick baked brick walls (Section 3.4) and the walls of the North Palace were 17.5 m thick with a limestone façade, later strengthened on both the inner and outer side, making a 29 m-wide composite wall (Section 2.3). Using the 1:3 proportion to calculate the height of these extremely thick walls gives results that are not feasible. It would have given the incredible heights claimed by some Greek authors, who may have seen some ruins and actually done such calculations.

Cuneiform texts describing walls, and giving measurements or numbers of bricks, seem, at least in Babylon in the Neo-Babylonian period, in most cases to measure the maximum thickness of the walls including projections or towers. This has been taken into account when comparing them with modern measurements of walls, which normally (as in this study) measure the minimum core of the wall only (Sections 1.5.1, 8.5).

Ordinary walls of Neo-Babylonian houses (at least in the areas of Babylon on higher ground known through excavations) were often placed on the surface with no, or a minimum of, foundations. When possible, the walls were placed on the ruins of previous houses in the area. Occasionally, when there was a sloping terrain or an infill, a foundation could be erected below the outer wall of the house (Section 6.3). Temples were mostly just placed on the surface, but when the level of the terrain increased, the walls were cut down to the new level and rebuilt from that new level, and often provided with a baked brick underground supporting wall, a *kisû*, around the remains of the old walls (Chapter 4). According to cuneiform texts, the South Palace was previously constructed with unbaked mudbricks, but then demolished and completely rebuilt with baked bricks by Nebuchadnezzar. All secure archaeological remains of the palace walls are of baked
bricks (Section 3.2).

Depending on whether we are dealing with a temple, a palace, or a private house, there appear to be special rules for the construction of the walls during the Neo-Babylonian period in Babylon (and elsewhere). The basic construction geometry of the walls seems partly to differ depending on the type of building.

Temples have towers, with slots or niches, at the main entrance to the temple complex and mostly also at the doorway between the central courtyard and the cella. The outer walls of the temples and the walls of the central courtyard often have projections and recesses. The cella has, behind the statue of the god standing on a podium, a niche in the wall. The walls of most of the excavated temples are of unbaked mudbrick. An exception is Nebuchadnezzar’s Nabû temple, built of baked bricks, according to inscriptions and archaeological evidence. According to cuneiform texts, the same baked brick construction was used for some other, not yet excavated, temples, namely, two temples for Gula, and one for Šamaš as well as the New Year temple (Sections 4.4, 4.11). The floors of all excavated temples were of baked brick, sometimes covered with asphalt (Chapter 4).

Traditionally, private houses have flat exterior walls, but during the Neo-Babylonian period there developed a quite popular style with zigzag walls (Section 6.1). In these houses, the brick core of external walls does not follow the line of the wall, but instead the bricks have a more or less strict north–south and east–west alignment, which creates a zigzag structure on the outside of the walls (Fig. 6.4). This style seems to have continued at least into the Achaemenid period.

There are no recognised remains of the early palaces in Babylon built with unbaked mudbrick, which Nebuchadnezzar claims that he demolished. In the preserved palaces built with baked brick, it is possible to see a development in the external walls of the palaces during the Neo-Babylonian period in Babylon. An old section of the South Palace has the same zigzag construction as many of the private houses, but in baked brick. In the second step, the zigzag was abandoned and around the South Palace instead there are walls with towers that protrude on both sides of the walls. In the third step, visible at the North Palace, we have walls with towers or projections either on only one side, or on both sides but not in corresponding positions. Similarly to the cella of a temple, the throne room of a palace had a niche in the wall behind a podium for the king’s throne (Chapter 3).

The widest excavated room, the 17.5 m-wide throne room in the South Palace, has already been discussed (Sections 3.2.4, 8.2). Other principal rooms in the same palace are between 12 and 8.6 m wide. In the North Palace the principal rooms are 11 and 9 m wide, and in the Summer Palace the principal rooms are 10 and 9 m wide (Sections 3.2.5, 3.2.6, 3.3.3, 3.7). The widest excavated principal room in a private house is 7.0 m (Section 6.3.1). The cella of the Marduk temple has not been traced in any excavation. In the excavated temples, the ante-cells and cellas are between 6.6 m and 3.0 m in width. Roofing such extreme widths required skilled workers, and wood that the kings proudly boasted of having been able to obtain from far away. The common, more modest roofs, however, could be constructed with local materials (Section 4.6).
There are a huge number of door openings in all types of buildings recorded during excavations in Babylon that give the width of the openings. However, in only a few is the top preserved, or is it possible to reconstruct its height. From the discussions in Sections 1.5.2, 2.1.3, 2.4, we have some idea of the proportions of door openings, ranging from 1:2.6 to 1:2.8. Here, something like this has been applied whenever possible. In the case of double doors, there may have been less height for a given width. As usual in Mesopotamia, the doors were of wood, moving around a pole standing on a pivot stone. Important doors could have metal plating.

The floors and streets, when not simply stamped earth, consisted of some layers of baked bricks with bitumen, lime-gypsum or earth between. Sometimes such floors could have a top surface made of larger bricks, of bitumen, or a layer of paving stones (Chapters 3–6). In the later Achaemenid, Hellenistic and Parthian periods, floors could be made in the Greek–Roman way by means of Greek floor plaster (Section 3.2.6, 3.7).

8.4 Surface decoration
A wall of unbaked mudbrick normally had a covering of mud plaster, something that can be seen not only on the insides and outsides of houses, but also on the mudbrick city walls. In important mudbrick buildings, such as temples and larger private houses, there was often a covering of white lime-gypsum coating or painting over the mud plaster (Chapters 4, 6).

Walls of baked bricks seem to be – partly – different. Whereas there are traces of white lime-gypsum plaster inside baked brick buildings, there are no such traces on exterior walls. These probably had no plaster, but showed the brick façade. Had there been plaster on the Ištar Gate, the wall reliefs would have been invisible (Sections 2.4, 2.6). The only possible known exception is the highest preserved row of unglazed relief animals on the Ištar Gate, which was found covered with gypsum. It may have been an attempt on Level 3 to experiment with technical solutions in order to enhance the visibility of the decoration – the next step was glazed bricks (Section 2.4).

Several kinds of additional decorations or adornments can be found on walls and buildings in Babylon. Some types are general for all categories of constructions, whereas others are limited to specific types of buildings.

A number of temples have been excavated and parts of their inner wall surfaces can still be observed where the floor level was raised considerably (usually owing to an increase in the nearby street level). When needed, an outside strengthening wall, a kisû, was added to the structure. The Nabû temple was raised by some 4 m. Between the two floors, there was some rather well-preserved white lime-gypsum plaster. There was also black bitumen, painted in bands or stripes on some of the white walls, in some door openings, in niches, and completely covering the wall of the courtyard before the cella of the female goddess. The floor was black with asphalt (Section 4.5, Figs. 4.23, 4.24, 4.26).

In the same way, the Ištar temple had white lime-gypsum plaster (on top of a mud...
plaster), with black bitumen decoration in bands on the walls, in door openings, in niches and on the whole front wall of the courtyard. The floor was black with asphalt (Section 4.6, Figs. 4.33, 4.35, 4.37).

The Ninmah temple had traces of white lime-gypsum plaster on the outside wall and on walls in the inner courtyard. There was black asphalt on the floors (Section 4.8, Fig. 4.47). Similarly, the Ninurta and Ishara temples had white walls and traces of black bitumen decoration (Sections 4.9, 4.10, Figs. 4.53, 4.58). The Marduk temple had white lime-gypsum plaster on the walls with a black floor in the few excavated rooms, but the main courtyard floor consisted of bricks only. Owing to lack of excavation, our knowledge about the inner parts of the temple is rather limited. There is hardly anything left of the gold decoration on the walls of the cellas of Marduk, Zarpanitu, and Nabû, referred to in inscriptions (Section 4.2, Fig. 4.11).

It is interesting to note that, whereas the male gods’ temples had white walls, often with some limited black decoration, the goddesses’ temples, in at least two cases, had the main wall of the courtyard facing the cella totally covered by black. With the state of excavation and preservation, it is not possible to say how far this may be a more general trend. It may be possible to compare the traditional white clothing for men and black for women in the area.

In a similar way, the baked brick walls between the remains of floors inside the South Palace preserved some evidence that the inner walls were covered with white lime-gypsum plaster (Section 3.2.2, Fig. 3.11), and in one case it is even possible that one wall had a complete covering of black bitumen (Section 3.2.4, Fig. 3.18).

The lower parts of the walls of the Istar Gate, with unglazed reliefs, were found rather well preserved, exposing nine rows of relief animals which, to a large extent, can still be seen on the spot in Babylon (Section 2.4, Fig. 2.29, 2.30). The quite famous wall decorations of coloured glazed bricks, often in relief, from the Istar Gate, the Processional Way and the South Palace (Sections 2.4, 2.6, 3.2.4) were not found well preserved but almost completely, with a few exceptions, as small brick fragments. The German archaeologists found 36,368 fragments of glazed baked clay bricks scattered over the central palace area and especially around the remains of the Istar Gate; they registered these and tried to use them for reconstructions (Section 2.6, 3.2.4, Figs. 2.35, 2.36, 3.17). In various places in the palace area, especially in the southwest section of the South Palace, they also excavated 687 fragments of glazed quartz bricks, which have been much more difficult to use as the basis for large-scale reconstructions (Section 3.2.6).

8.5 Building documentation

The historical royal inscriptions (introduced in Section 1.3) have been discussed frequently above, and in addition some allusion has been made to documents of an economic nature concerning building construction activities in Babylon. Royal inscriptions present the history and building constructions as the king wanted them to be presented. There is
no real reason to question whether the constructions were executed as described, as the reality behind the words would have been known and visible to contemporaries. There may be some limits to the inscriptions’ accuracy: a foundation deposit expresses the idea of the construction when the deposit was placed in the wall, and may not completely agree with the final result. However, it is sometimes hard to understand and interpret the information fully. This study has attempted to treat all information seriously, and to seek reasonable interpretations. Sometimes, alternatives have to be considered.

There have been several references to the cuneiform text Tintir, which describes Babylon particularly from a religious perspective. The names of the temples, the districts, the city walls and the gates given in this text seem, in a systematic way, to match quite well the archaeologically known situation in Babylon in the Neo-Babylonian period. This text, therefore, has been used to supplement information about unexcavated entities in Babylon (Sections 1.3, 2.1.3, 4.4, 4.11, 5.1).

Information in the historical texts, including royal inscriptions, is limited for earlier periods, but fuller from the Neo-Babylonian period. This is the expected result of the normal placement of royal inscriptions in the walls of the constructions described in the texts. When earlier levels have not been excavated, or are not preserved owing to later activities, the historical information is often missing unless it has been preserved in other, e.g. archival, contexts.

Several references to lengths, widths, and heights of building constructions in cuneiform texts have been discussed above. The approximate measurements, with rounded numbers, given here are recalculation using 1 ammatu = 0.50 m, but in reality, it should be slightly more (as can be seen below for the ziggurat). It is possible to relate most of these dimensions to measured entities in Babylon; some may no longer exist, but the reasonableness of the sizes can be considered.

The size of Babylon inside the city walls was recorded in inscriptions of Esarhaddon as $30 \times 30$ ašlu or about $1,800 \times 1,800$ m. This is correct for the north–south distance, but the actual west–east distance was $2,700$ m. These round numbers correspond better with east Babylon $1,700 \times 1,500$ m. Later in the reign of Nabonidus the total length of the city walls is given as $20$ UŠ or $7,200$ m. This is too short. It may have been considered to be an appropriate round number; but probably a better explanation is that a long section of the wall was no longer in use as city walls, being by then inside the central palace area. When this section is deducted, the distances agree rather well (Section 2.1.1).

Distances between walls were measured at easily distinguishable sections in the palace area. Distances to walls along the Processional Way were measured in a northern direction along the street from the northernmost edge of the Ištar Gate. There were measurements to the outside of walls at the outer northern façades at $360$ ammatu, or $180$ m, and $490$ ammatu, or $245$ m. There is one example of a measurement to the inside of the first-mentioned wall with $335$ ammatu, or $167.5$ m, possibly because the text continues with more details about the palace inside the wall (Sections 2.1.1, 3.3.3).

The widths of walls are mostly measured at the maximum point, including towers, in contrast to modern measurements that usually include only the main body of the
wall. Embankments in the central palace area are recorded as 21 bricks in thickness, corresponding to the inner Nebuchadnezzar embankment when the towers are added or the embankment outside thereof, however without the towers. The two embankments, of 32 and 23 bricks, may agree with the west–east inner North Palace wall and the wall from it along the street to the Ištar Gate. The embankment at the outer city wall is referred to as a 36-brick embankment, when the towers are included (Sections 2.3, 3.3.3).

The heights of walls and elevation of streets are also normally measured at the points of maximum distance from the bottom of the foundation to the top of the walls. The embankment, said to be 43 ammatu, or 21.5 m, high, could agree with the highest standing part near the Ištar Gate (Section 2.3). The Summer Palace is said to measure 60 ammatu, or 30 m. This cannot be the length of the palace, which was much larger, so it must mean the height of the wall from the bottom of the foundation. Such a height is in good agreement with the archaeological findings (Section 3.7). A cylinder inscription, excavated where the upward slope of the Processional Way starts, mentions successive elevations of the street of 6, 18, and 17 ammatu, or 3.0, 9.0, and 8.5 m, a total of 41 ammatu, or 20.5 m, which could only refer to reality at the highest point of the street at the Ištar Gate (Sections 2.4, 5.7). The towers of the outer city wall are recorded as being 25 ammatu, or 12.5 m high (Section 2.3).

A very well-known measurement is the size of the ziggurat. Length, width, and height are given in texts as 3 suppan = 180 ammatu, or 90 m, more exactly measured at 91.5 m. The height can only be verified by means of the discussed inscription and the drawing of the ziggurat, both resulting in some 90 m (Section 4.3.2).

In several cases, information can be found in the inscriptions about other details, of which any other trace has long vanished. The top of the ziggurat had the façade decorated with blue-glazed bricks, according to royal inscriptions. Not even fragments of such bricks have been reported found in the area of the ziggurat in Babylon, but the similar ziggurat in Borsippa had a large number of blue-glazed remains (Section 4.3.2). In a similar way, the inscriptions inform us of the existence of crenellations on the top of external walls of the North Palace, something that would probably not have been considered so readily without this explicit information (Section 3.3.3).

In inscriptions, descriptions of the use of different kinds of good-quality wood for roofs, doors, and as reinforcements to brick structures provide important supplementary information, given the rather few remains (Sections 1.6, 3.2.4, 3.2.7, 3.3.3, 3.7, 5.2). The situation is the same for other materials, such as metals.

Contributions of construction materials and corvée labour in Babylon from different areas of the empire are referred to in royal inscriptions and in archival texts. This was probably a common procedure, but it is only occasionally attested in available inscriptions and documents during Nebuchadnezzar’s reign: for the South Palace (Section 3.2.7); for the North Palace (Section 3.3.3); and for the ziggurat (Section 4.3.2). Some details about the construction work of the Ninmaḫ temple can be found in documents discovered there (Sections 4.8). A much later example may be mudbricks for the reconstruction of the Marduk temple during the time of Antiochus I (Section 4.2).
Other types of cuneiform archives and libraries found in the buildings allow insights into the people concerned and the uses of the buildings. Some important references have been given (Sections 2.4, 3.2.2, 3.3.3, 4.5, 4.6, 4.8, 4.9, 4.10, 5.4, 6.2, 6.3.1, 6.3.2, 6.3.3). However, that is essentially another study with a different focus.\(^1\)

8.6 Elevations and periods

In this study, the German local elevation system has been applied in all areas of Babylon for all elevations and all excavations. As previously mentioned, the German elevation ±0.0 m equals Iraqi 25.5 m above sea level, according to modern nearby benchmarks of the municipality of Hillah measured by the WMF in the area of the Ištar Gate. A number of elevations have been mentioned and discussed in previous chapters, many solving problems but a few leaving questions open. Whenever possible, there have been attempts to give definitive or provisional dates to elevations. Here follow some of the results and remaining questions.

The deepest excavations have been conducted down to about −5.0 or −4.0 m at the embankment and the bridge (Sections 1.5.2, 5.2) and the highest at +25.0 m in Babil (Sections 3.7, 7.6). During some years of the German excavations, the Hindiyah barrage was broken, resulting in a much lower groundwater level in Babylon and thus allowing excavations to deeper levels. The present normal height of the groundwater, at about +2.5 m to +0.5 m (Fig. 1.9), rules out all excavations under the water level.

Excavations have often been conducted in the higher areas of the city where even limited late Old Babylonian levels have been attested in Merkes and nearby, at about −2.5 m to ±0.0 m. The Old Babylonian levels sink down in all directions under the groundwater level in the more typically low-lying areas. The situation is the same for the Middle Babylonian levels attested in the highest Merkes area at about −1.0 m to +4.0 m; in all other exposed areas these levels are beneath the groundwater (Sections 5.4, 6.2).

The focus here is on the Neo-Babylonian and other late periods, with the many documented, large reconstructions and new constructions on higher levels. All archaeologically attested elevations from −5 m to +25 m have levels dated to these periods. These levels have often been attested on higher ground, and in flatter areas the levels descend beneath the groundwater, as already noted for the north slope of Merkes q2 (Sections 1.5.2, 6.3.1). A result of the various elevations in different parts of Babylon, even in ancient times, is that, whereas Neo-Babylonian and later levels are, of course, always above Old and Middle Babylonian levels on the same spot, a later level at one location can be lower than an older level at another location in the city. With the present groundwater level, even much of the Neo-Babylonian architecture excavated by the Germans is now covered by water, e.g., all of the north stone wall of the North Palace (Fig. 1.7).

From the Neo-Assyrian period, there are remains of the embankments by Sargon II

\(^1\) See provisionally Pedersén 2005.
in the northwest corner of the South Palace. After the historically recorded destruction of Babylon by Sennacherib, Esarhaddon and especially Assurbanipal carried out rebuilding at the Marduk temple, with floors 3 and 4 at +2.8 m and 2.9 m, and at the ziggurat. Esarhaddon built the lower level at +3.8 m of the Nabû temple, which is now reconstructed. Assurbanipal also carried out works at the Ninmah temple, which, however, may have been completely rebuilt later on.

During Nabopolassar’s reign, the embankments along the river and the moats were built with the foundation at about −5 m and with a walkway along the river at −1.4 m. The main and front city walls of unbaked mudbricks were placed on the surface at about ±0 m, protected from the water in the moat by means of the deeper embankments (Section 2.2).

During the reign of Nebuchadnezzar, first an additional embankment with towers was built outside the previous one, with a walkway higher up at −0.4 m. The mudbrick city walls remained essentially as before but were made higher in some areas. The next step was the doubling of the size of the city with a new outer city wall, consisting of a mudbrick wall and a heavy embankment of baked bricks, including towers, with a walkway at about +2 m. The palaces were expanded and surrounded by walls of baked bricks founded at −3 m, or when they served as embankments, founded at −5 m. The final step was the huge baked brick embankment along the river completed under Nabonidus, probably at −5 m with a walkway at +0.5 m. For every main rebuilding of the embankments along the river, the walkway was raised about a metre. Was this the result of a changed ideology of construction, or an increased water level? (See Section 2.3.)

The South Palace of Nabopolassar was, according to Nebuchadnezzar’s later inscriptions, built of unbaked mudbrick and demolished before the latter’s new building. Nabopolassar’s palace may perhaps have been at the same level of +2 m attested for the subsequent first baked brick palace, or somewhat lower. Koldewey had another preferred interpretation using +8 m, which gives elevation problems (Sections 3.2.1, 3.2.7).

There were large changes in the palaces during Nebuchadnezzar’s reign. A first rebuilding of the South Palace may have been realised with a floor at +2 m, and with baked brick walls instead of the unbaked mudbrick walls of Nabopolassar’s palace. Later, the palace was reconstructed with the floors at +8 m to +10 m. Even later in the reign of Nebuchadnezzar, there were further reconstructions with floors at +12 m to +13 m. Any even higher level has not been preserved. The North Palace was a new creation during Nebuchadnezzar’s reign, with a floor at +15 m on a large terrace. In the north of the outer city, he also constructed the so-called Summer Palace with the floor quite high at +21 m; the exceptional height is even mentioned in inscriptions. A canal inside the North Palace had the top of its embankment at ±0 m, the same as the foundation of the mudbrick city walls. High water in the river should always have been well below this level (Section 3.2).

The Marduk temple was, from an ideological point of view, the most important
building in Babylon. It was erected on a mudbrick foundation platform, unlike any other attested temple in the city. The first, mostly destroyed, remains of floors at +2.3 to +2.4 m have not been dated but may possibly be before Sennacherib’s destruction of the city. The floors at +2.8 to +2.9 m date to Assurbanipal and the floors at +3.4 to +4.4 m to Nebuchadnezzar, with at least one additional higher floor, possibly Hellenistic (Section 4.2).

The nearby ziggurat was surrounded by a large precinct, where three construction levels with rather complete rebuilding and change of wall structure at −1 m, +2 m and +4 m have been identified. At least the middle level can be connected with Nebuchadnezzar, and perhaps also the third (Section 4.3.1). The lower part of the ziggurat itself consisted of the unbaked mudbrick core of ca. 60 × 60 m, the foundation of which has not been reached by excavations, and a mantel of baked brick of about 15 m thickness with a foundation at −4 m. The foundation of the central staircase of the ziggurat was at −1.3 m, the same as the only remains of a pavement just north of the ziggurat. Esarhaddon and Assurbanipal worked on the ziggurat, and Nabopolassar continued it, but it was Nebuchadnezzar who completed the construction from a height of 15 m to the top of 90 m (Section 4.3.2).

The four reconstructed temples in Babylon are situated along the Processional Way, or not so far from it. Those on the street were all elevated, like the street itself, during the reign of Nebuchadnezzar. The Nabû temple was situated next to the Processional Way. The lower floor of the temple at +3.8 m is from the reign of Esarhaddon and is the level now reconstructed in Babylon. When the nearby Processional Way was raised, Nebuchadnezzar rebuilt the temple on a higher level at +8.0 m (Section 4.5). The nearby Ašratum temple had a floor at about +6 m (Section 4.7).

The Ninmaḫ temple, situated in the palace area next to the Ištar Gate, followed the general substantial increase in elevations in the palace area during Nebuchadnezzar’s time. A possible first floor may have been at +4.5 m by Nebuchadnezzar, or possibly Assurbanipal. Then followed a series of higher floors by Nebuchadnezzar at +7.0 m, +8.0 m, and +12.0 m. The level at +13.5 m by Nebuchadnezzar was completed by Amēl-Marduk. The last attested floor, at +14.5 m, would be somewhat later, possibly Nabonidus (Section 4.8).

The Ištar temple in the area with domestic buildings was constructed on a level of +5.2 m by Nebuchadnezzar or possibly Nabopolassar. It was rebuilt at +7.0 m by either Nebuchadnezzar or Nabonidus, and finally again reconstructed at +8.0 m by Nabonidus (Section 4.6).

There are two excavated temples in the south of the inner city, neither of them reconstructed. The Ninurta temple had a first, possibly unfinished, level at about ±0.0 m, perhaps by Esarhaddon or Assurbanipal. The main construction level was at +2.4 m by Nabopolassar, followed by rebuilding at +3.2 m and +3.8 m by Nebuchadnezzar, and a last level at +4.4 m either by Nebuchadnezzar or a later king (Section 4.9). The Išḫara temple had the first floor level at ±0.0 m without known dating, but Nebuchadnezzar cannot be excluded. The +0.9 m floor is dated to Nebuchadnezzar. Then followed a
8.6 Elevations and periods

major raising of the floor to +4.7 m and +5.3 m also during Nebuchadnezzar’s reign. The following floor at +5.8 m may also date to the same king or be slightly later (Section 4.10).

Domestic houses have been found on most excavated elevations. The Neo-Babylonian private houses are attested up to at least +8 m with Achaemenid, Seleucid, and Parthian buildings on still higher levels (Chapter 6).

The bridge over the river was constructed on a series of baked brick pillars with foundations at a depth of at least −5 m or deeper. The bridge is dated early in the reign of Nebuchadnezzar or perhaps during Nabopolassar. Just beside the bridge on the eastern side were remains of connected street levels at +2.3 m and +3.1 m. A few metres higher at +6.5 m was the remains of a later, Parthian colonnaded street (Section 5.2).

The Processional Way from the Marduk temple in a northern direction has been exposed for some 1,200 m. The first third of the attested street, along the ziggurat area, is rather flat, about +2 m to +3 m, and with limited remains of older levels. The second third of the street splits up, with different and increasingly higher levels during the reign of Nebuchadnezzar. In this way the constantly rising street levels go up to the deliberate rising palace area in the vicinity of the Ištar Gate. In the north, the last third of the attested street instead slopes down from the palace area. The result is a series of street levels in the palace area corresponding to the levels within the palaces and the Ištar Gate. Basically, attested in the palace area are +9 m, +12 m and +15 m with even more levels at the Ištar Gate (Sections 5.3–5.8).

Two sections (with a total length of 100 m) of the 190 m-long eastern outer wall of the South Palace consisted of small bricks of early Nebuchadnezzar or Nabopolassar up to +8.3 m. The door in the wall (arched gate, Bogentor) and the street outside had a +2.0 m level, indicating that a palace floor, which has not been preserved, would have been at the same elevation. This would have been the street level also at the main entrance to the palace, later totally rebuilt in connection with a higher level with normal Nebuchadnezzar bricks. The Ištar Gate, another 100 m to the north of the main South Palace entrance, was built with normal Nebuchadnezzar bricks and has, therefore, to be dated somewhat later than the first palace wall with its smaller bricks (Chapter 5).

The exposed levels of the Processional Way beside the South Palace, in the southeast corner and at the main entrance, were at +2 m and +9.5 to +10.5 m. Inside the South Palace, with walls of normal Nebuchadnezzar bricks, are the remains of floors at +9 to +10 m and +12 m with reworking up to +13 m; a floor at +2 m corresponding to the door opening can be assumed. At the Ištar Gate, built with normal Nebuchadnezzar bricks, street levels are archaeologically attested and also mentioned in cuneiform texts to be −5 m, −2.5 m, +7 m, +11 m, +13 m, and +15 m.

It is obvious that there are several agreements when a small slope is allowed, but also some problems. The answer may be partly that all levels are not preserved, or not excavated. The lowest attested street along the palace, at +2 m, was beside a palace wall of the older bricks; probably the street pavement also used such bricks, even if no documentation is available. This was the situation at the +2 m or +3 m street more to the
south. An elevation of this street at about +1.4 m through the Ištar Gate as for the Uraš Gate would be expected and would fit well, but has not been attested.

On the other hand, the Ištar Gate was built of the normal Nebuchadnezzar bricks and, therefore, somewhat later. It is reasonable to suppose that Nebuchadnezzar’s construction of the Ištar Gate required the removal of not only the old gate, but also the corresponding street. This may explain the missing street level, but we have two deeper levels. The −5 m may perhaps just be the foundation level, but the street at −2.5 m is attested both archaeologically and in cuneiform. So, we end up with a missing street at about +2 m and a superfluous street at −2.5 m. This is a problem that lacks a proper answer for the moment. Perhaps we have to calculate with more street levels, or date some levels differently.

In short, the diversity of elevations in lower and upper areas, much more limited in previous periods, was very much accentuated through the creation of much higher palace areas during Nebuchadnezzar’s time. The city doubled in area and the principal points, with the palaces, were raised considerably in height.

8.7 Reconstructions in Babylon
Reconstructions can make an archaeological site interesting. Without excavations, we can obtain very little knowledge from a site. Unprotected, excavated ruins are often just a number of foundations exposed to the weather and visitors. With protections on top of the ruins, in the form of reconstructed upper parts of the walls, the ruins are shielded and visitors can get a better idea of the original ancient building. This is the reasoning behind the Iraqi reconstructions in Babylon, as well as many reconstructions elsewhere. The model for the Iraqi reconstructions with unbaked mudbricks and baked bricks were the German publications and the reconstructions in Berlin (Section 2.6) with glazed relief bricks. What is shown in Babylon is essentially the German excavators’ interpretation of parts of the buildings in Babylon.

The upper parts of ancient walls are hardly ever preserved to the top of the wall and to the roof, but, as has been noted previously, there are some pictures showing walls and buildings, and principles that can relate the width of a wall to its height (Sections 1.5.2, 2.1.3, 8.3).

Ancient walls of baked bricks have in Babylon been reconstructed with modern baked bricks on top of the ancient ones. The reconstructions were made in two steps. First, a few metres were constructed using modern bricks the same size as the ancient bricks. Then, some years later, the walls were completed to the top with modern standard bricks. This is the situation for many walls in the palace area, in many locations in the South Palace (Section 3.2), and in the eastern part of the North Palace along the Processional Way (Section 3.3). This means that the details of the reconstructions have a more reliable quality in the lower parts, which are the areas normally inspected in detail by visitors. This is similar to the Berlin reconstructions, where original fragments were used for details in the lower parts and everything at the top is modern (Section 2.6).
Ancient walls of unbaked mudbrick have, in such protected places as the inner walls of buildings, been reconstructed upwards with mudbrick. In exposed areas, the mudbrick walls have been reconstructed with baked bricks on top of the ruins, something like what Nebuchadnezzar himself did at the Nabû temple (Section 4.5). Such reconstructions (with baked brick on top of ancient unbaked mudbrick) can be found in the outer walls of all reconstructed temples (Sections 4.6, 4.8). In ancient times, all walls of unbaked mudbrick were covered by mud plaster, and for important buildings the mud plaster was covered with a lime-gypsum plaster. All reconstructions of unbaked mudbrick walls, including the original sections of those walls, are covered by the same modern mud plaster. This gives the walls a unified look, as in ancient times, but both the original and the reconstructed parts of the walls look similar, which may be a problem, as there are few explanations about what is the original core and what is modern. It means that the walls are quite often much more authentic inside, in the core, than in the impression they give from the outside. On the other hand, only the inner walls of the Nabû temple and selected walls in the Ninmaḫ and Ištar temple reconstructions have been given surfaces similar to the original lime-gypsum plaster. All other temple walls are just mud, which is less prestigious and durable than the original construction.

In other cases, all that can be seen above the underground mudbrick foundations is reconstructed with baked brick without any plaster. This is the situation for the inner building of the Marduk Gate and for the theatre (coloured cement brick). Only the main, inner building of the Marduk Gate has been rebuilt, not the front gate (Section 2.6). Whereas the Marduk Gate and the theatre have been rebuilt with baked brick without plaster instead of the original plastered mudbrick, the palaestra at the theatre has rebuilt walls of baked bricks with plaster (Section 7.2).

8.8 Future
Babylon has, in the title of this book, been called “the Great City”. We know its size within the city walls, some 950 ha; and in its heyday as the capital of the Neo-Babylonian empire it was larger than any other known contemporary city. However, we do not know how densely it was populated and, therefore, how many inhabitants it may have had. There has never been any proper archaeological survey of the whole city area. A geomagnetic or ground-penetrating radar survey would probably be able to show much more of the layout, including houses, streets, and canals, even though large areas are affected by the modern cultural landscape. Borings in order to study the ancient rivers and canals would be of great interest. Selected archaeological tests could also be of value for an improved understanding of unexplored parts of the site, but the main task for the future should be keeping the site clean, maintained and easy for visitors to access.

With such an enormous ancient site, well known from tradition and literature, the protection and maintenance of ruins and reconstructions require solutions with a long-term perspective. There is a need for cooperation with surrounding settlements, so that they respect the antiquity site but also are able to profit from visitors coming to Babylon.
The groundwater has been rising over the centuries, due to the agricultural needs of the surrounding countryside. Some kind of compromise, with some water drainage, could be an important factor for the city’s long-term preservation.

The most famous buildings, the city walls and the gates, the temples with the ziggurat, as well as the palaces with the Hanging Gardens, are all either attested as ruins or reconstructions, or almost completely missing. There is a great need to inform visitors about what the traces in the ruins can tell us about the original splendour of the city. A visitor centre offering proper information is required, and preferably a museum. Walkways for visitors and explanation signs of main parts of this large and important ruined city, which since 2019 has been a UNESCO World Heritage Site.

This book has been an attempt to bring the German and Iraqi archaeological excavations together and to give full attention to available contemporary historical texts. The interpretations given here are those considered to fit the available material best, at the time of writing; but additional evidence and deeper studies may lead to changed preferences on some points in the future. I hope others will be inspired to continue work on the large and important site of Babylon.
Bibliography

Abdul-Razzak, Wahbi
1985 Ishtar gate and the inner wall. Sumer 41. 19, 22, Arabic section 34–35.

Abraham, Kathleen

Al-Bayati, Ahmed

Ali, Shah Mohammed
1979 The Southern Palace. Sumer 35. 82–93.
1985 The Southern Palace. Sumer 41. 52–54, Arabic section 77–82.

Al-Kassar, Awlad Abdul-Kareem

Allinger-Csollich, Wilfrid

Al-Mutawalli, Nawala

Al-Rawi, Farouq N. H.
1985 New historical documents from Babylon. Sumer 41. 23–26, Arabic section 43–44.

Al-Sam, Saad – Abdul-Sattar, Sabah
1979 Preliminary study about the possibility of lowering the underground water level in Babylon. Report quoted according to Consulting Engineering Bureau 2012.

Al-Suba’ai, ‘Ata Allha Mohammed
Alwan, Kamil Shihab
1979  The Vaulted Structures or the so-called Hanging Gardens. Sumer 35. 127–136.

André-Salvini, Béatrice (ed.)

Baqir, Taha
1961  Foreword. Sumer 17. 1–11.

Barnett, Richard David

Bergamini, Giovanni

Beaulieu, Paul-Alain

Bichler, Reinhold – Rollinger, Robert

Blume, Horst-Dieter

Brown, David

Budge, E. A. Wallis
1920  By Nile and Tigris: A narrative of journeys in Egypt and Mesopotamia on behalf of the British Museum between the years 1886 and 1913. London.

Cancik-Kirschbaum, Eva

Cancik-Kirschbaum, Eva – van Ess, M. – Marzahn, J. (eds)
Caubet, Annie – Kaczmarczyk, Alex  

Cavigneaux, Antoine  


Chaverdi, Alireza Askari – Callieri, Pierfrancesco – Matin, Emad  

Cole, Steven W. – Gasche, Hermann  

Connan, Jacques  

Connan, Jacques – Deschesne, Odile  

Connan, Jacques – Van der Velde, Thomas  
2010 An overview of bitumen trade in the Near East from the Neolithic (c. 8000 BC) to the early Islamic period. Arabian archaeology and epigraphy 21. 1–19.

Consulting Engineering Bureau, College of Engineering, Baghdad University  

Dalley, Stephanie  

Damerji, Moayad Said Basim  


2010 بابل كا دينغیر را قصة مدينة قتلتها الأساطير والنسب. Amman.

Da Riva, Rocío

Deubner, O.

Diodorus Siculus.

Finkel, Irving L.
Finkel, Irving L. – Seymour, Michael J. (eds)
Finkel, Irving L. – van der Spek, R. J. – Pirngruber, R.
2020 Babylonian Chronographic Texts from the Hellenistic Period. Writings of the Ancient World. Forthcoming cited according to https://www.livius.org/sources/about/mesopotamian-chronicles/

Frame, Grant

Frayne, Douglas R.

Fügert, Anja – Gries, Helen (eds)

Gasche, Herman


George, Andrew R.
1993 House Most High: The temples of Ancient Mesopotamia. Eisenbrauns. Winona Lake IN.

Goetze, Albrecht

Grayson, Albert Kirk
1975 Assyrian and Babylonian Chronicles. Texts from Cuneiform Sources 5. Augustin. Locust Valley NY.

Grayson, Albert Kirk – Novotny, Jamie
2012 The Royal Inscriptions of Sennacherib, King of Assyria (704-681 BC) 1. The Royal Inscriptions of the Neo-Assyrian period 3.1. Eisenbrauns. Winona Lake IN.
2014 The Royal Inscriptions of Sennacherib, King of Assyria (704-681 BC) 2. The Royal Inscriptions of the Neo-Assyrian period 3.2. Eisenbrauns. Winona Lake IN.

Hassan Ali, Abdul Kadir

Haubold, Johannes – Lanfranchi, Giovanni B. – Rollinger, Robert – Steele, John (eds)

Hauser, Stefan R.

Hawkins, David

Heinrich, Ernst

Heinrich, Ernst – Seidl, Ursula

Heinrich, Ernst – Seidl, Ursula

Herodotus

IGRF Magnetic Field Calculator
2016 http://www.ngdc.noaa.gov/geomag-web/?model=igrf/

Išḥaq, Danial
1985 The excavations at the southern part of the procession street and the Nabû ša ḫarê temple. Sumer 41. 30–33, Arabic section 48–54, Figs. 1–18.

Isler, Hans-Peter

Ismail, Bahija Khalil

Jakob-Rost, Liane

Janssen, Caroline

Josephus

Jotheri, Jaafar Hamza Abdulhussein

Jursa, Michael
Kamil, Ahmed Mohammed
1979 The inner wall of Babylon. Sumer 35. 137–149.
1985 Excavation at the northeastern part of the inner wall. Sumer 41. 20–21, Arabic section 36–42.

Kaniuth, Kai

Kleber, Kristin

Klengel-Brandt, Evelyn – Cholidis, Nadja

Koldewey, Robert
1900 Aus den Berichten Dr. Koldewey’s. Mittheilungen der Deutschen Orient-Gesellschaft 4. 1–3

Kose, Arno

Kuhrt, Amélie – Sherwin-White, S.

Kuntner, Walter – Heinsch, Sandra
Langdon, Stephen

Leichty, Erle

Lenzen, Heinrich J.

Lippolis, Carlo, – Baggio, Paolo – Monopoli, Bruno

Lukas, W.

Mallwitz, Alfred

Margueron, Jean-Claude

Marzahn, Joachim

Marzahn, Joachim – Schauerte, Günther (eds)

Matson, Frederick R.


Mielke, Dirk Paul


Mohammed Ali, Mohammed Said
1979 The Greek Theatre. Sumer 35. 94–111.

Moorey, Peter Rodger S.

Moortgat-Correns, Ursula

Müller-Skjold, Friedrich

Musah, Maryam Umran

Nagel, Wolfram
1966 Der Löwe von Babylon. Berliner Jahrbuch für Vor- und Frühgeschichte 6. 48–51, pl. XIII.


1979 Where were the “Hanging Gardens” located in Babylon? Sumer 35. 242–241.

Nasir, Mohammad
1979a The Temple of Ishtar of Agade. Sumer 35. 61–81.

1979b The so-called Summer Palace (Nebuchadnezzar’s life palace). Sumer 35. 150–159.

Novotny, Jamie – Jeffers, Joshua

Paterson, Archibald

Pedersén, Olof


Perrot, Jean

Pientka-Hinz, Rosel
Polony, Stefan – Winkler, Gerd

Porter, Robert Ker
1822 Travels to Georgia, Persia, Armenia, Ancient Babylonia, &c, &c during the years 1817, 1818, 1819, and 1820. Vol. II. Longman, Hurst, Rees, Orme, and Brown. London.

Reade, Julian

Renger, Johannes (ed.)

Reuther, Oscar

Rich, Claudius James

Richter, Christina Heike

Rollinger, Robert
Russell, John Malcolm

Sachs, Abraham J. – Hunger, Hermann

Sallabeger, Walter

San Nicolò, Marian

Sass, Benjamin – Marzahn, Joachim

Sauvage, Martin

Schachner, Andreas

Schaudig, Hanspeter

Scheil, Vincent

Schmid, Hansjörg

Schmidt, Erich

Schmidt, Jürgen
Seidl, Ursula

Selby, William B. – Collingwood, W.
1859 Plan of the supposed ruins of Babylon.

Selby, William B. – Collingwood, W. – Bewsher, J. B.
1885 Surveys of Ancient Babylon and the surrounding ruins with part of the rivers Tigris and Euphrates, the Hindiyeh Canal, the Sea of Nejf & the Shat Atshar made by order of the Government of India in 1860 to 1865.

Seymour, Michael


Sigrist, Marcel – Damerow, Peter
2001 http://cdli.ox.ac.uk/wiki/doku.php?id=year_names/

Smith, George

Sollberger, Edmond

Stephens, Ferris J.

Sternitzke, Katja

Stevens, Kathryn

Stolper, Matthew W.

Streck, Michael

Thureau-Dangin, François

Tite, Michael S. – Shortland, Andrew J. – McCarty, B. – Paynter, S.
Bibliography 301

Unger, Eckhard

van der Spek, Robartus (Bert) J.

Verbrugghe, Gerald P. – Wickersham, John M.

Waerzeggers, Caroline

Waerzeggers, Caroline – Seire, Maarja (eds)

Wallenfels, Roland

Weidner, Ernst

Weiershäuser, Frauke – Novotny, Jamie
2020 The Royal Inscriptions of Amēl-Marduk (561–560 BC), Neriglissar (559–556 BC),
and Nabonidus (555–539 BC), Kings of Babylon. The Royal Inscriptions of the Neo-Babylonian Empire 2. Eisenbrauns. University Park PA.


Weissbach, Franz H.

Wetzel, Friedrich


Wetzel, Friedrich – Schmidt, Erich – Mallwitz, Alfred

Wiseman, Donald J.

Wunsch, Cornelia

Xenophon

Digital resources
Downloads of selected items related to Babylon and this book can be found at:
http://www.lingfil.uu.se/research/assyriology/babylon/
Maps of Babylon.
Figures of Babylon.
Babylon Digital Model viewer in the days of Nabonidus.
# Appendix: Periods and Rulers

A listing of chronological periods and rulers mentioned in the main text.

<table>
<thead>
<tr>
<th>Period</th>
<th>Dates</th>
<th>Rulers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Dynastic</strong></td>
<td>2900–2350 BC</td>
<td></td>
</tr>
<tr>
<td><strong>Old Akkadian</strong></td>
<td>2350–2100 BC</td>
<td>Narām-Sîn 2254–2218 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Šar-kali-šarri 2217–2195 BC</td>
</tr>
<tr>
<td><strong>Third Dynasty of Ur</strong></td>
<td>2100–2000 BC</td>
<td></td>
</tr>
<tr>
<td><strong>Mari</strong></td>
<td></td>
<td>Puzur-Ištar ca 2040 BC</td>
</tr>
<tr>
<td><strong>Old Babylonian</strong></td>
<td>1894–1595 BC</td>
<td>Sumuabum 1894–1881 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sumulael 1880–1845 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sābium 1844–1831 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apil-Sîn 1830–1813 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hammurapi 1792–1750 BC</td>
</tr>
<tr>
<td><strong>Kassite</strong></td>
<td>1595–1155 BC</td>
<td>Burnaburiaš II 1359–1333 BC</td>
</tr>
<tr>
<td><strong>Middle Babylonian</strong></td>
<td>1157–979 BC</td>
<td>Nebuchadnezzar I 1125–1104 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adad-apla-iddina 1068–1047 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marduk-šāpik-zēri 1081–1069 BC</td>
</tr>
<tr>
<td><strong>Southern and Mari</strong></td>
<td></td>
<td>Šamaš-rēša-usur ca 770 BC</td>
</tr>
<tr>
<td><strong>Neo-Assyrian</strong></td>
<td>728–612 BC</td>
<td>Adad-nirari II 911–891 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sargon II 721–705 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sennacherib 704–681 BC</td>
</tr>
<tr>
<td><strong>Neo-Babylonian</strong></td>
<td>625–539 BC</td>
<td>Nabopolassar 625–605 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nebuchadnezzar II 604–562 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amēl-Marduk 561–560 BC</td>
</tr>
<tr>
<td><strong>Achaemenid</strong></td>
<td>539–331 BC</td>
<td>Cyrus II 538–530 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cambyses II 529–522 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Darius I 521–486 BC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Xerxes I 485–465 BC</td>
</tr>
</tbody>
</table>

Note: The dates and rulers listed are approximate and based on historical records.
**Hellenistic 331–141 BC**
- Alexander III the Great 331–323 BC
- Antiochus I 281–261 BC
- Antiochus III 222–187 BC

**Parthian 141 BC–226**

**Sasanian 226–636**
Babylon: The Great City

- Main buildings and streets
- German and Iraqi excavations
- Reconstructions and a digital model
- Cuneiform documents and history

Babylon: The Great City is a richly illustrated advanced introduction to and study of the German and Iraqi excavations in Babylon. The excavated inscriptional materials have been used in the interpretation of the evidence.

The book is based on many years of study of the finds and of the documentation from the excavations along with repeated inspections of all the visible ruins in Babylon. A digital model of the city and integrated GIS work have been used to analyse and test the interpretations as well as support the understanding of the site. The modern history of the site is discussed including the modern reconstructions.

The book could be used both as a modern scholarly study of the UNESCO World Heritage Site and as an advanced guidebook for serious visitors to Babylon itself.

Olof Pedersén is Professor Emeritus of Assyriology at Uppsala University in Sweden. He has been studying Babylon for more than 20 years and written several articles and a 2005 book about the city, Archive und Bibliotheken in Babylon: Die Tontafeln der Grabung Robert Koldewey 1899–1917.