

# Specialist workshop:

## Danish-German Jerash Northwest Quarter Project

### 11 October 2017

Directors:

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UrbNet  
Centre for Urban Network Evolutions  
The Danish National Research Foundation



Danmarks  
Grundforskningsfond  
Danish National  
Research Foundation



AARHUS  
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WILHELMS-UNIVERSITÄT  
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RUB

EliteForsk (Danish Ministry of Higher Education and Science)  
H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning  
Deutscher Palästina Verein

## Funding



H. P. Hjerl Hansens Mindefondet for  
Dansk Palæstinaforskning

Deutscher Palästina Verein

Elite Research Prize (Danish Ministry of  
Higher Education and Science)

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# CARLSBERG FOUNDATION

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## Outline

The Danish-German Jerash Northwest Quarter Project has been ongoing since 2011. The project, which centres on an exploration of the highest area within the walled city, has yielded fruitful results about Gerasa/Jerash from Roman times into the Medieval (Ayyubid-Mamluk) period. By exploring an area, which was situated away from the main thoroughfare of the city, new insights have been gained into urban infrastructure, domestic and public building projects as well as urban production. Many of these results have been published in preliminary reports and academic articles as well as public dissemination initiatives. However, in order to present the full overview of the excavations and its results, it is now time to bring the final publications to a close. The intention is to do this within as holistic a framework as possible in order to communicate and contextualise the various material groups as tightly as possible within their chronological and material setting.

In order to bring the specialists of the team into closer contact and communication with each other, the specialists' workshop is intended to, on the one hand, introduce the specialists to the other groups of material and questions that have been core aspects of the excavation and, on the other hand, further dialogue across empirical material, case studies, natural science analyses and research questions. The hope is that the final publication chapters in this way will reflect the intention we had with the project from the beginning, namely to present a detailed and contextualised view of the Northwest Quarter, which has turned out to hold important insights into the history of ancient and medieval Gerasa/Jerash.

Gerasa has since the late 1930s been presented as one of the most important archaeological sites of the Middle East due to its state of preservation and the nature of the archaeological material coming from the site. However, although the archaeology of Gerasa and its surroundings cover a long period of time, starting with the Paleolithic mega site of Tell Abu Suwan just south of the modern city centre up into modernity, the archaeology and history of the site have most often been narrated in historically defined periods (i.e. prehistoric, Hellenistic, Roman, Islamic, Mamluk). With the final publications of the Danish-German Jerash Northwest Quarter, it is the intention to also focus on the chronological span of the excavations and attempt to situate all discovered periods within the larger context of the development of the site and the region in general. Furthermore, the methodological approach within the project, aiming at full quantification of all material groups, is hoped to bring a new aspect into the final publications and show in which ways such detailed and meticulous documentation may help us to understand continuities and changes, which otherwise would not have been visible to us.



Within the context of the Danish-German Jerash Northwest Quarter, an intensive survey (geodetic and geophysical) was undertaken in 2011, followed by a series of excavation campaigns from 2012 to 2016. In total, 24 trenches have been excavated over a period of five years. In 2017, a study campaign was undertaken. In this booklet, survey plans, trench photos, some profiles as well as general photos from the campaigns have been included in order to give specialists who have not been on site the possibility of gaining an impression of the archaeological situations. Furthermore, the evidence lists from all excavation campaigns have been made available to all specialists. The intention with these materials is that specialists will be able to navigate within the contexts and preliminary chronologies established for each trench and for areas of the excavation. At the specialists' workshop, we have the possibility of discussing and refining contextualisation of finds and trenches.

Since Gerasa/Jerash is one of the most important archaeological sites in the Middle East, the final publications of the Danish-German Jerash Northwest Quarter Project will constitute a substantial contribution to the knowledge we have about this site and its development over more than a thousand years. These results will offer new insights into the history of the site but also into methodological advances and interdisciplinary initiatives during the project. Through several of these sub-projects, it has been possible to show that through targeted examinations of certain material groups, or parts thereof, or through implementation of new methods within the fields of geoscience and radiocarbon dating, a more contextualised understanding of developments and their reasons can be gained. At the specialists' workshop, we want to bring some of these perspectives together in order for all specialists and team members to engage with the implications that such new results may have for our overall understanding of the material with which we are working.

The specialists' workshop is structured around a series of short presentations by specialists followed by discussions. This is done in order to give all of us insight into the expert work, which has been ongoing within the framework of the project. There will also be the possibility of engaging into overarching discussions about contexts and chronologies in the second part of the workshop through series of group work planned for the afternoon. It is our hope that through the hosting of this event, we will all produce even better chapters for the final publications of the excavations.

We look forward to spending the day with you.

Achim Lichtenberger and Rubina Raja

## The Danish-German Jerash Northwest Quarter Project

In the year 2011, the joint archaeological project between Aarhus University and Ruhr University Bochum (later Westfälische Wilhelms-Universität Münster) under the direction of Prof. Dr. Rubina Raja and Prof. Dr. Achim Lichtenberger was begun. The project is funded by the Carlsberg Foundation, H.P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning and the German Research Foundation (DFG). The aim of the project is to examine the settlement history for the until now largely unexplored Northwest Quarter in the ancient city of Gerasa, modern Jerash in Jordan.

Gerasa was a Hellenistic-Roman influenced city, which was refounded in the 2nd century BC. The Northwest is densely covered with building structures laid out on a terrace system and stretches over the entire hill (app. 4 hectares). The area which is located within the walled ancient city is the highest point in the ancient city. One specific research focus is the settlement history of the hill and the continuities and changes which this area underwent over time.

View of the Temple of Artemis from the Northwest Quarter towards the southeast (Danish-German Jerash Northwest Quarter Project).

To the west, the area is defined by the ancient city wall with the Northwest Gate and to the north by the North Decumanus. The exact layout of the North Decumanus close to a prominent hill slope is not yet known and is therefore one of the future areas of investigation. To the south, the area is defined by the end of the steep slope and to the east by the monumental Artemision from the 2nd century AD.

Previous field work in the area has been confined to the excavation of the so-called Synagoge Church by Hamilton (published in Kraeling 1938). The Synagoge was converted into a church around AD 530/531. A few trial trenches were laid out by British and American archaeologists in the early 1980s, but the results of these did not bring to light any substantial information about the history of the Northwest Quarter.



## Ceramics in Context

Ceramics were a ubiquitous commodity in Antiquity. Due to its high prevalence and functionality, ceramics constitute a source of absolutely fundamental empirical material in archaeology, which can be studied across time and space. The development of distinguishable types (studies of form development - typologies) that slowly but surely evolved (often over centuries) serves as the most important dating criteria in Classical Archaeology. As a result, an understanding of society in Antiquity relies heavily on the exploration and understanding of ceramics. This 3-year research project, involving an assistant professor, a PhD student and student assistants, takes a context-first approach to the study of ceramics, and the aim is to optimise the gain of this important group of materials through contextualisation.

Studies of ceramics often remain typological in nature. For centuries, since the inception of the discipline, typological studies have significantly influenced the perception of ceramics in the field of Classical Archaeology as an isolated group of material. Ceramics were introduced as a group of objects, neither related to other contemporary materials, nor related to life in general in Antiquity and with no consideration for their use as everyday utility items. As a result, some publications fail to contextualise ceramics. Excavated ceramics are often published in voluminous catalogues, without regard to their societal context. At the same time, the sheer amount of ceramics from excavations becomes a factor in publications often never being submitted, representing a lack in Classical Archaeology.

These challenges are also apparent in the well-known Decapolis city, Gerasa (modern Jerash), in northern Jordan. For more than 100 years, excavations have been carried out by e.g. Yale University in the 1920s and 1930s, as well as Institut Français du Proche Orient and a number of other missions. To date, these have not given rise to any ceramic typologies or significant publications on ceramics. In the past 30 years, at least three major projects have been initiated, all aiming to publish reference works on the ceramics from Jerash. All attempts have failed, due to the amount of materials and the intention of covering all aspects of the ceramics. Subsequently, Jerash – like many other Roman cities – is left with numerous excavated, non-contextualised monuments, lining the beautiful main street, but the history of everyday life in Jerash, both during the Roman Empire and the many periods of affluence that followed, including the Byzantine and the Islamic periods, remains untold. One needs to underline that several recent projects, including the Jarash Islamic Project, have begun to publish material with a view to a contextualised approach, and that such projects have provided the basis for understanding the early Islamic period in Gerasa.

The current project is rooted within the framework of a larger project, which was initiated in 2011, and which has already published a number of significant results. The Danish-German Jerash Northwest Quarter Project is, on the one hand, a research-based excavation project and, on the other hand, a project consisting of a series of sub-projects, all contributing to the overall understanding of the city across a broad time spectrum. These projects are all based on studies of groups of materials that rely on ceramics as the basic dating criterion. At first sight, the results from these projects are limited in scope; however, when considered on a comparative level, they all provide significant insights into the cultural development and societal conditions in Antiquity. Among these topics are the study of urban development in the Roman time, the transition from Christianity to early Islam, and the development of urban spaces in medieval times, all of which have delivered breakthrough results based on detailed analyses of empirical material, including the study of ceramics in context. These studies are a result of constant dialogue and exchange on an interdisciplinary level, integrating perspectives from the humanities and methods from natural science.

Ceramics in Context will investigate ceramic contexts, related to particularly selected finds, on the one hand related to the history of settlement in Jerash and on the other hand related to overall issues of urban lifestyle in the Eastern Mediterranean. The aim is to explore contexts defined as closed contexts (i.e. contexts that can be analysed in themselves), comprising all groups of materials. By adopting an approach that ascribes first priority to empirical data, the project will constitute a reference for future complete typologies of ceramics. Thus, the project is a fundamental-research project with aims that are realistic within the given timeframe and will contribute significant results for the understanding of Jerash, the Levant and Antiquity in general.

Contrary to other ceramics projects, this project will not start from scratch. The Danish-German Jerash Northwest Quarter Project has worked in Jerash since 2011 with a team of between 25-40 students and specialists. Each campaign has focused on incorporating new methods and implementing these at the focused excavation sites, which have been strategically placed, with reference to previous research results. Each year, a maximum of five trenches are laid out, usually 5x5 metres with the possibility of extension. Methods implemented so far include geomagnetics, ground-penetrating radar, XRF scanning, OSL, micromorphology, ICPMS studies, as well as 14C AMS dating. This approach has yielded excellent results, and each year, all finds and their contexts are published as excavation reports and thematic syntheses. An assistant professor, a PhD student and student assistants are integrated into an already existing team of researchers who work with innovative methodologies.

## Project participants

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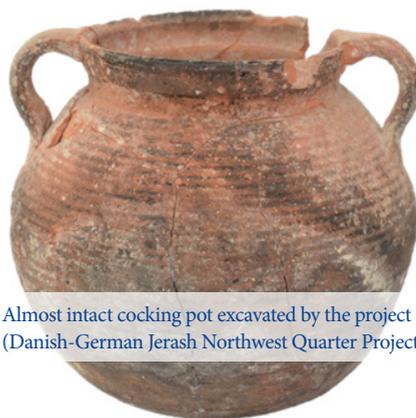
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Almost intact cooking pot excavated by the project  
(Danish-German Jerash Northwest Quarter Project).

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A locally produced lamp – an example of a so-called 'Jerash lamp' (Danish-German Jerash Northwest Quarter Project).

## Other (former) team members

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Nicolai Broen Thorning (2015)  
Steff Elgaard Wiklund (2016)



A locally produced lamp – an example of a so-called 'Jerash lamp'  
(Danish-German Jerashi Northwest Quarter Project).

**Site plan:  
Northwest Quarter**

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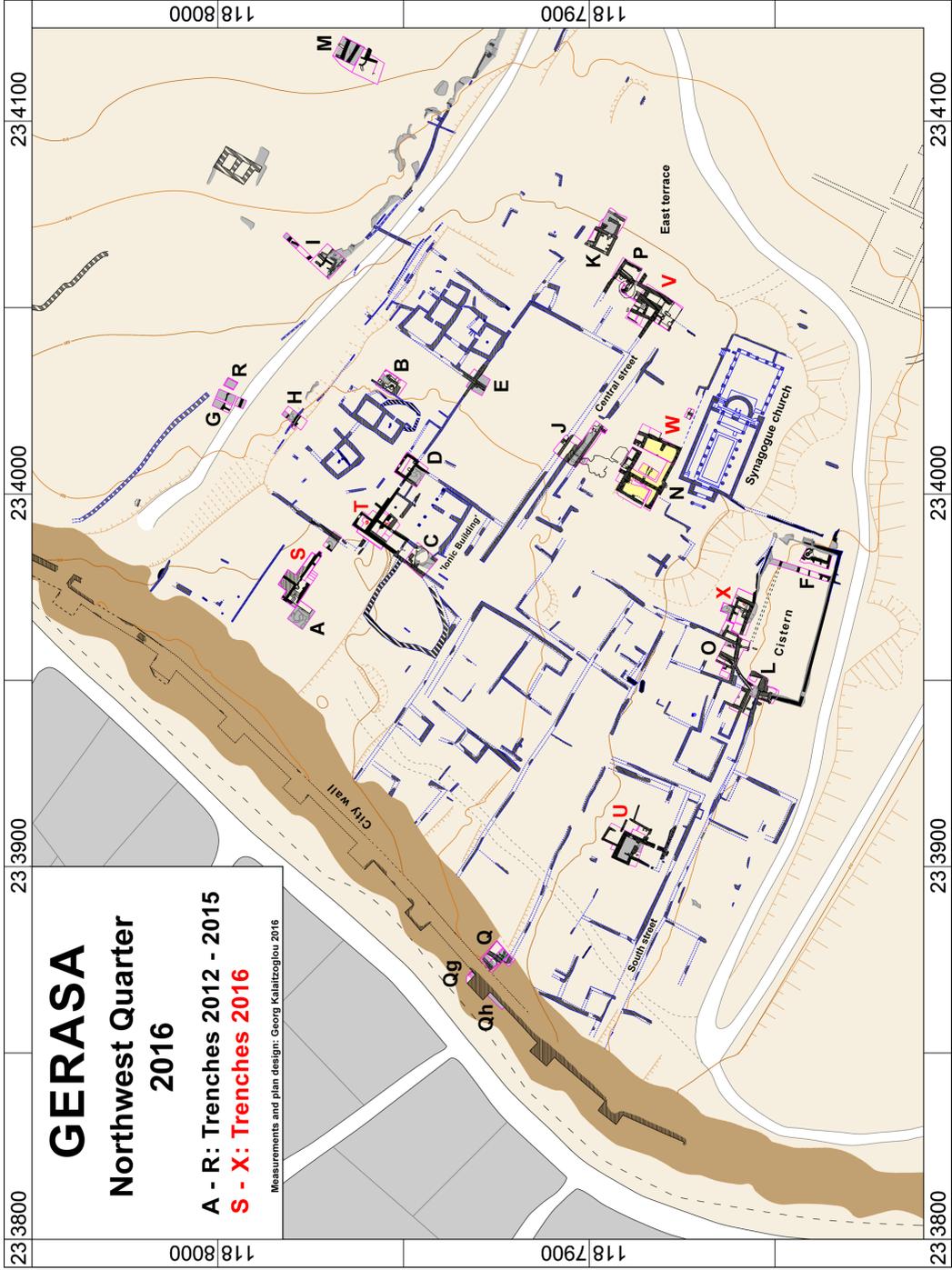
# GERASA

## Northwest Quarter 2016

**A - R:** Trenches 2012 - 2015

**S - X:** Trenches 2016

Measurements and plan design: Georg Kalaitzoglou 2016



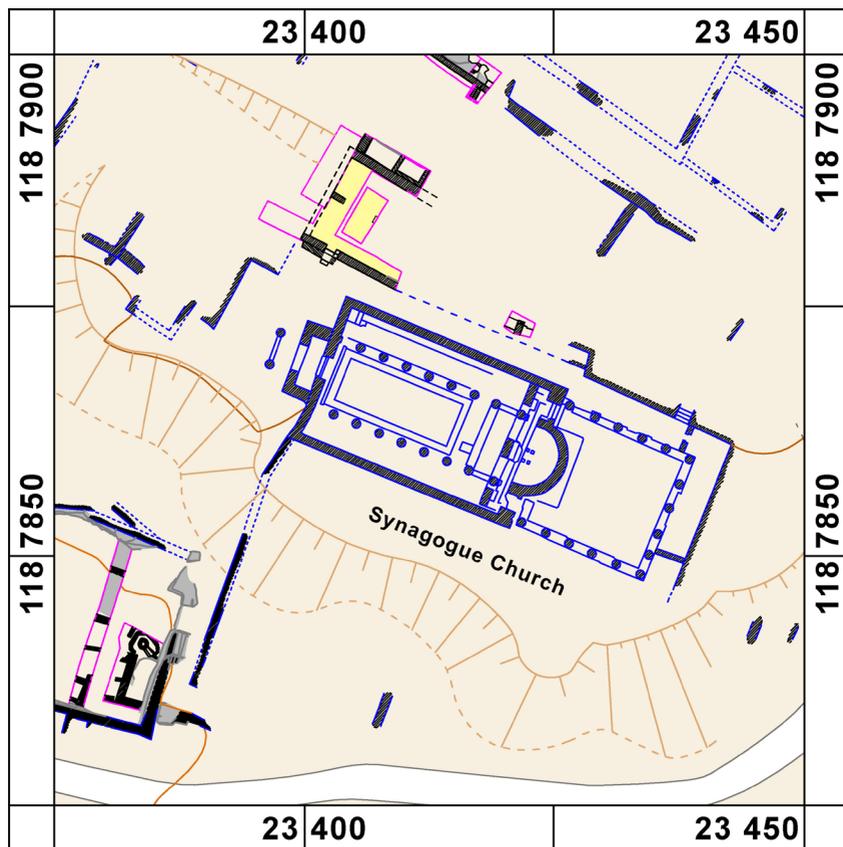
## Mosaic hall

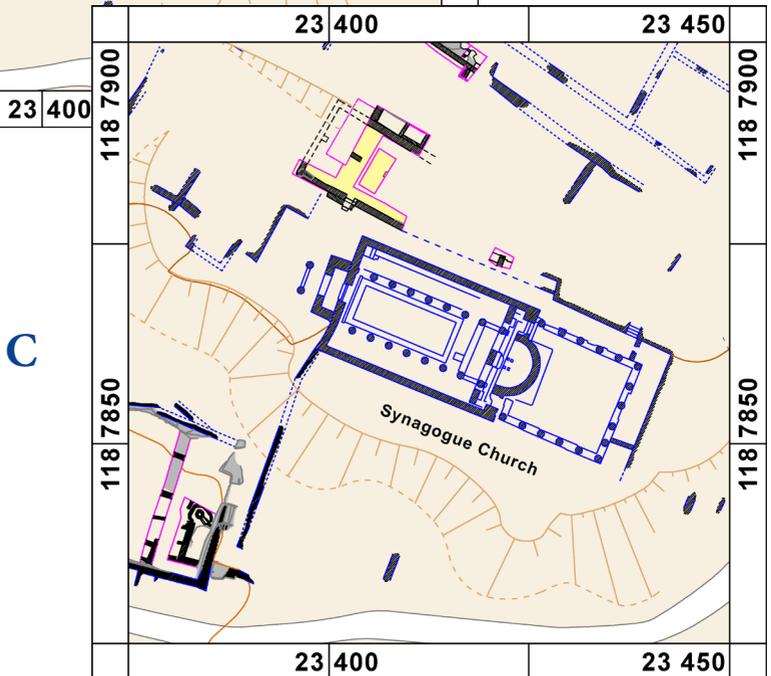
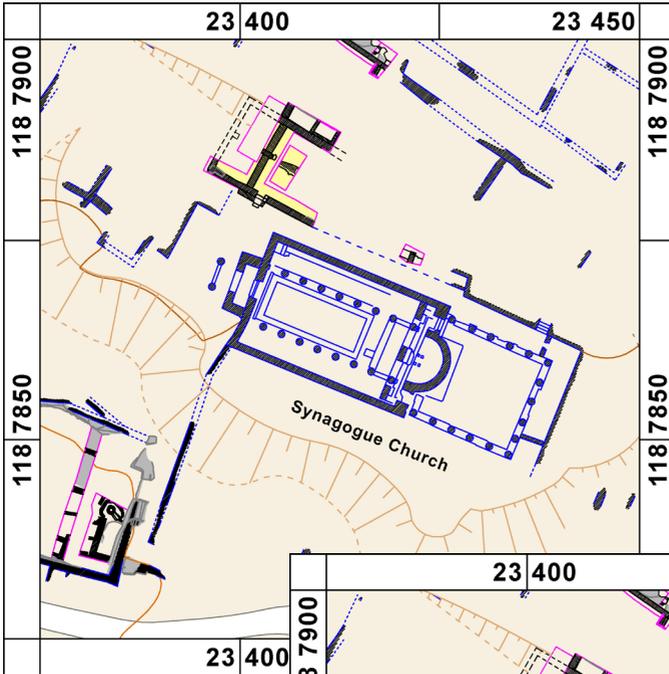
A. 576

B. Early Islamic

C. End of the 6th century

A





## Trench photos 2013

- p. 21: Trench D
  - p. 22–23: Trench E
  - p. 24–259: Trench F
  - p. 26–27: Trench G
  - p. 28–29: Trench H
-



Trench D, south room (Danish-German Jerash Northwest Quarter Project).



Trench E, *in situ* water pipe in the so-called South-West Room (Danish-German Jerash Northwest Quarter Project).

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Trench E, detail of *in situ* water pipe in the so-called South-West Room (Danish-German Jerash Northwest Quarter Project).



Trench F, trial trench in the large rectangular cistern in the Northwest Quarter, (Danish-German Jerash Northwest Quarter Project).



Trench F, additional cave cistern belonging to the large rectangular cistern. (Danish-German Jerash Northwest Quarter Project).



Trench G, aimed to investigate the presence of the North Decumans in the Northwest Quarter (Danish-German Jerash Northwest Quarter Project).

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Trench G, overview of sector f, where a wall was found (Danish-German Jerash Northwest Quarter Project).



Trench G, overview of profiles (Danish-German Jerash Northwest Quarter Project).



Trench H, *in situ* water pipe and later water channel excavated on the Northern Slope of the Northwest Quarter (Danish-German Jerash Northwest Quarter Project).



Trench H, overview of trench including northern profile (Danish-German Jerash Northwest Quarter Project).

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## Trench photos 2014

- p. 31: Trench I
  - p. 32–33: Trench J
  - p. 34–35: Trench K
  - p. 36–37: Trench L
  - p. 38–39: Trench M
-



Trench I, trial trench on the Northern Slope of the Northwest Quarter made to investigate the presence of the North Decumanus (Danish-German Jerash Northwest Quarter Project).



Trench J, view of the inside of a cave discovered during excavation (Danish-German Jerash Northwest Quarter Project).



Trench J, overview of the trench (Danish-German Jerash Northwest Quarter Project).

114-Jac  
29.8.14



Trench J, staircase leading into the cave and profile filled with pottery (Danish-German Jerash Northwest Quarter Project).



Trench K, overview of the so-called *House of the Scroll* (Danish-German Jerash Northwest Quarter Project).



Trench K, cooking area in the so-called *House of the Scroll* (Danish-German Jerash Northwest Quarter Project).



Trench L, mortar lining of the rectangular cistern (Danish-German Jerash Northwest Quarter Project).



Trench L, detail of a profile in the rectangular cistern (Danish-German Jerash Northwest Quarter Project).

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Trench M, overview of the re-excavated area, which clarified that it did not belong to the North Decumanus (Danish-German Jerash Northwest Quarter Project).



Trench M, southern profile of the trench (Danish-German Jerash Northwest Quarter Project).

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## Trench photos 2015

- p. 41: Trench N-J
- p. 42–43: Trench O
- p. 44–45: Trench P
- p. 46–47: Trench Q
- p. 48–49: Trench Qg
- p. 50–51: Trench R



Trench J and N, overview of the mosaic with inscriptions (Danish-German Jerash Northwest Quarter Project).



Trench O: Water channel (Danish-German Jerash Northwest Quarter Project).



Trench O, overview of the trench investigating the surrounding areas of the rectangular cistern (Danish-German Jerash Northwest Quarter Project).



Trench P, overview of the northern rooms and courtyard of the so-called *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



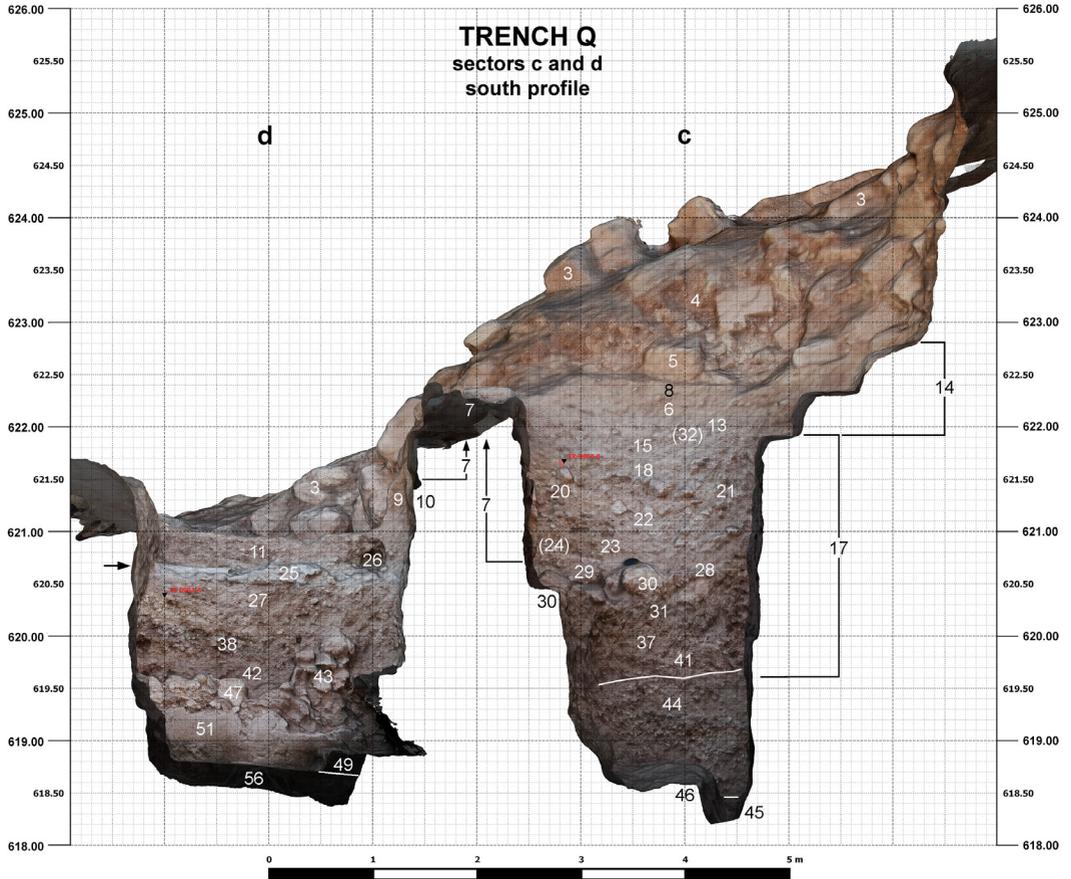
Trench P, southern profile in the northeasternmost room of the *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



Trench P, western profile in the courtyard of the *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



Trench Q, profile in the trench excavating the city wall (Danish-German Jerash Northwest Quarter Project).



Trench Q, South profile of the trench excavating the city wall (Danish-German Jerash Northwest Quarter Project).



Trench Qg, detail of the outside of the city wall (Danish-German Jerash Northwest Quarter Project).



Trench Qg, city wall excavated from the outside (Danish-German Jerash Northwest Quarter Project).



Trench Qg, detail of the city wall, excavated from the outside (Danish-German Jerash Northwest Quarter Project).



Trench R, profile and worked bedrock. the trench examined the soil stratigraphy (Danish-German Jerash Northwest Quarter Project).



Trench R, southern profile showing the erosion direction (Danish-German Jerash Northwest Quarter Project).

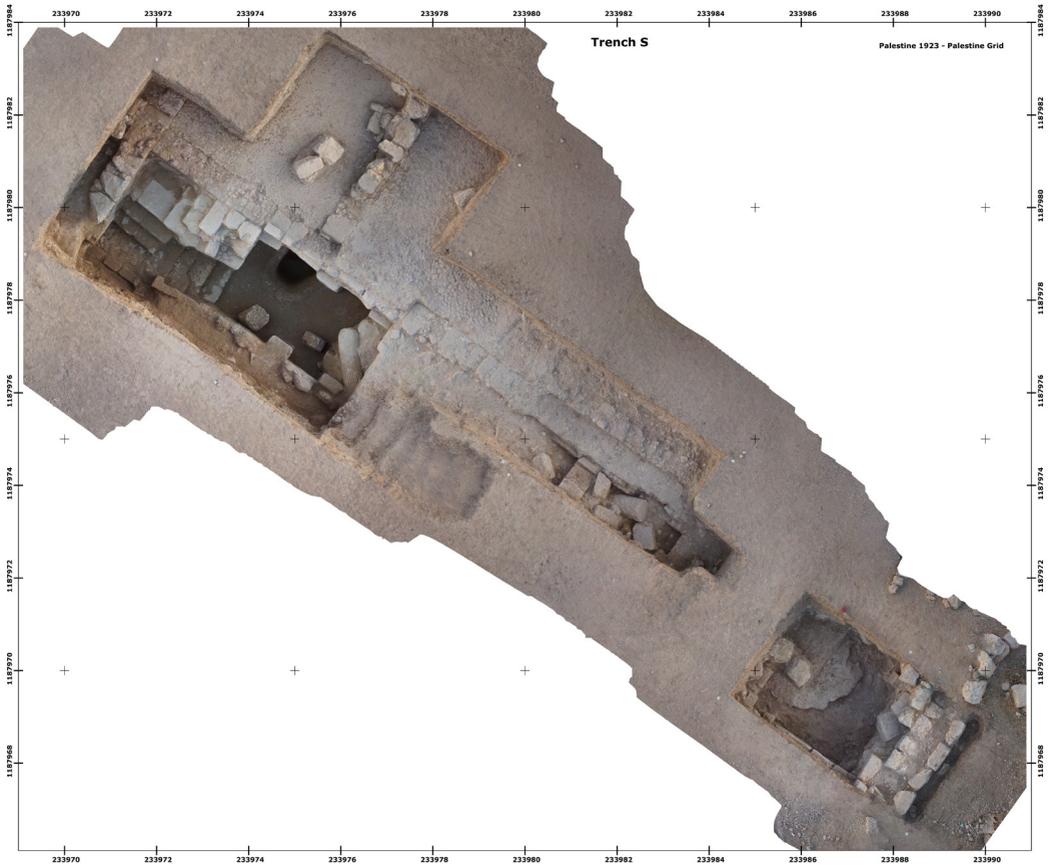
## **Trench photos 2016**

p. 53–55: Trench S  
p. 56–57: Trench T  
p. 58–59: Trench U  
p. 60–61: Trench V  
p. 62–63: Trench W  
p. 64–65: Trench X

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Trench S, overview of the cistern on the highest point of the Northwest Quarter (Danish-German Jerash Northwest Quarter Project).



Trench S, overview of the entire trench (Danish-German Jerash Northwest Quarter Project).



Trench S, Northern profile inside the cistern on the highest point of the Northwest Quarter (Danish-German Jerash Northwest Quarter Project).



Trench T, overview of the entire trench (Danish-German Jerash Northwest Quarter Project).



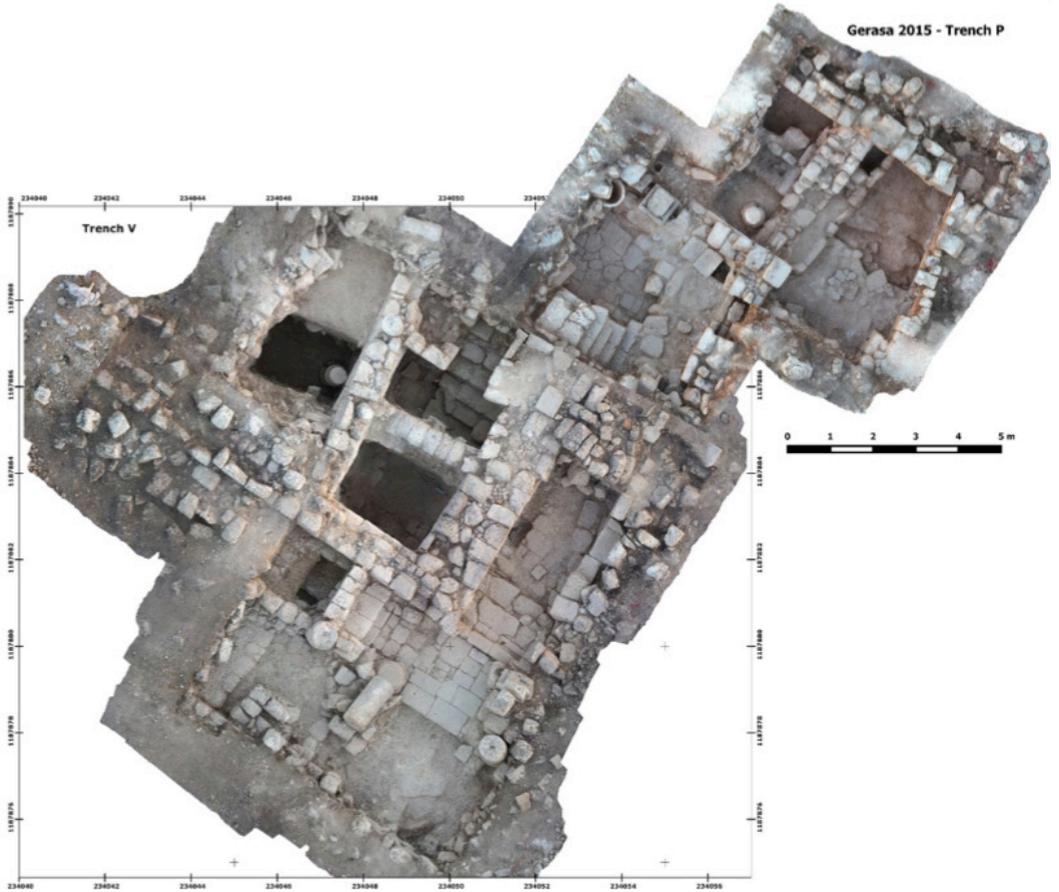
Trench T, profile of wall inside the house (Danish-German Jerash Northwest Quarter Project).



Trench U, overview of the entire trench (Danish-German Jerash Northwest Quarter Project).



Trench U, profile in blocked entrance door in the northwest room of the House (Danish-German Jerash Northwest Quarter Project).



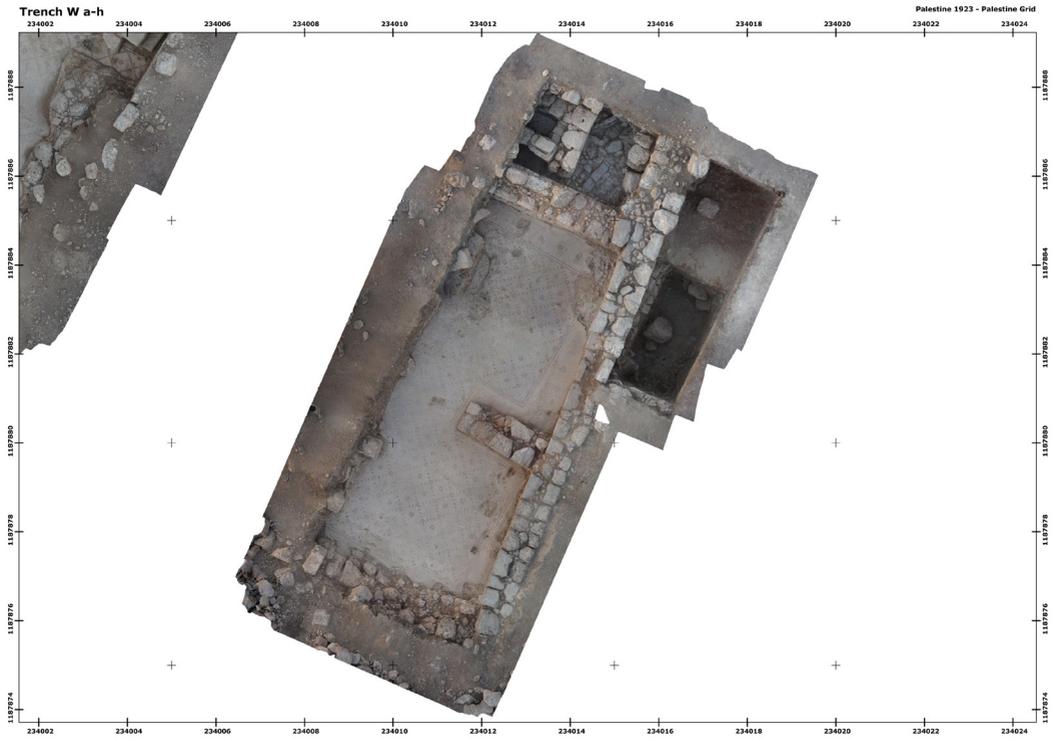
Trench V, overview of the entire excavated area, including trench P, of *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



Trench V, view of two basement rooms and an in situ arch, in *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



Trench V, South profile under the in situ arch in *House of the Tesserae* (Danish-German Jerash Northwest Quarter Project).



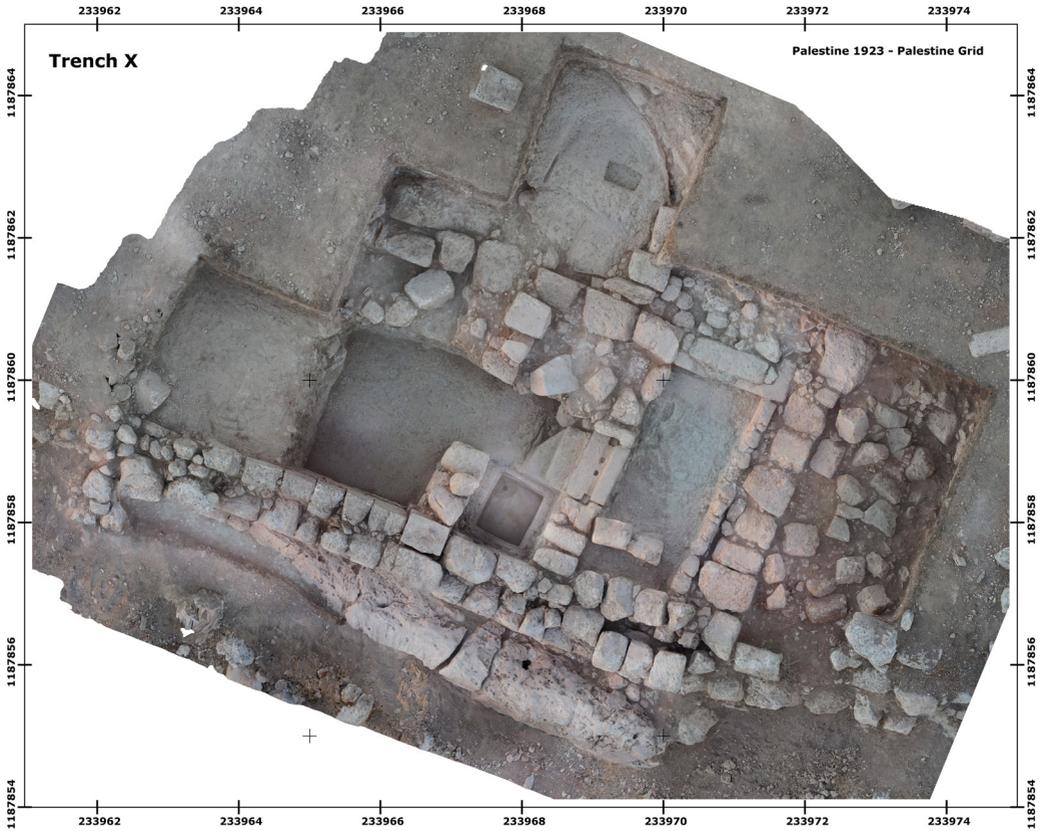
Trench W, overview of sectors a-h showing the mosaic (Danish-German Jerash Northwest Quarter Project).



Trench W, detail of the mosaic (Danish-German Jerash Northwest Quarter Project).



Trench W, detail of mosaic and wall structures (Danish-German Jerash Northwest Quarter Project).



Trench X, overview of the entire trench (Danish-German Jerash Northwest Quarter Project).



Trench X, Entrance to sediment basin (Danish-German Jerash Northwest Quarter Project).

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## Publications

Alexaki, I. (2017). "Det antikke Gerasa – modelleret i 3D", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 47–52.

Alexaki, I. (2017). "Modelling ancient Gerasa in three dimensions", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 47–52.

Bangsgaard, P., Lichtenberger, A. & Raja, R. (2017). "Animal bones from the North-West Quarter", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 107–114.

Bangsgaard, P., Lichtenberger, A. & Raja, R. (2017). "Dyreknogler fra Nordvest-kvarteret", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 107–114.

Barfod, G. H. (2017). "“Recycling, reuse and reduce”: glass in ancient Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 115–120.

Barfod, G. H. (2017). "Genbrug af glas i det antikke Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 115–120.

Barfod, G. H., Larsen, J. M., Lichtenberger, A. & Raja, R. (2015). "Revealing text in a complexly rolled silver scroll from Jerash with computed tomography and advanced imaging software", *Nature Scientific Reports* 5 (Article number: 17765), 1–10.

Csitneki, D. (2017). "Jerash Bowls: Fine tableware from Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 99–106.

Csitneki, D. (2017). "Jerash-skåle: Fornemt service fra antikkens Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 99–106.

Egelund, L. & Pedersen, M. N. (2017). "A day on the dig", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 21–26.

Egelund, L. & Pedersen, M. N. (2017). "En dag i felten", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 21–26.

Haensch, R., Lichtenberger, A. & Raja, R. (2016). "Christen, Juden und Soldaten im Gerasa des 6. Jahrhunderts", *Chiron* 46, 177–204.

Holdridge, G., Kristiansen, S. M., Lichtenberger A., Raja, R. & Simpson, I. (2017). "City and wadi: Exploring the environs of Jerash", *Antiquity* 91, 358, 1–6.

Kalaitzoglou, G. (2017). "Excavating Jerash: Archaeological aims, methods and techniques", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 33–40.

Kalaitzoglou, G. (2017). "Udgravningen af Jerash: Arkæologiske målsætninger, metoder og teknikker", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 33–40.

Kalaitzoglou, G., Kniess, R., Lichtenberger, A., Pilz, D. & Raja, R. (2012). "Report of the geophysical prospection of the Northwest Quarter of Gerasa/Jarash 2011", *Annual of the Department of Antiquities of Jordan* 56, 79–90.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2012). "Das Nordwestviertel von Gerasa (Jordanien)", *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2010–2011*, Bochum, 69–73.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2013). "Preliminary report of the second season of the Danish-German Jarash Northwest Quarter Project 2012", *Annual of the Department of Antiquities in Jordan* 57, 57–79.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2013). "2012 Ausgrabungen im Nordwestviertel von Gerasa (Jordanien)", *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2011–2012*, Bochum, 65–68.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2014). "The Danish-German Jarash North-West Quarter Project 2013: Preliminary Field Report", *Annual of the Department of Antiquities of Jordan* 58, 11–37.

Kalaitzoglou, G., Lichtenberger, A. & Raja, A. (2014). "Ausgrabungen im Nordwestviertel von Gerasa (Jordanien)", *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2012–2013*, Bochum, 60–64.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2014). "Ausgrabungen im Nordwestviertel von Gerasa (Jordanien)", *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2015–2016*, Bochum, 85–90.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2015). "Ausgrabungen im Nordwestviertel von Gerasa", in: Berns, C., Müller-Kissing, M. & Stöllner, T. (eds.), *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2013–2014*, Bochum, 71–75.

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2016). "Ausgrabungen im Nordwestviertel von Gerasa (Jordanien)", in: Berns, C., Müller-Kissing, M. & Stöllner, T. (eds.), *Jahresbericht des Instituts für Archäologische Wissenschaften für das akademische Jahr 2014–2015*, Bochum, 89–94.

Kristensen, S. B. (2017). "Cooking up culture: production traditions in Late Roman-Byzantine locally produced cooking ware", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 75–82.

Kristensen, S. B. (2017). "Kultur i køkkenet: Traditionelle produktionsteknikker for lokalt køkkentøj fra senromersk-byzantinsk tid", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 75–82.

Kristiansen, S. M., Holdridge, G. A. & Simpson, I. A. (2017). "Reading the book of nature in Jerash: The soil archives", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 53–58.

Kristiansen, S. M., Holdridge, G. A. & Simpson, I. (2017). "Et kapitel om Jerash fra naturens store bog: Jordbunden som arkiv", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 53–58.

Larsen, J. M., Lichtenberger, A., Raja, R. & Gordon, R.L. (2016). "An Umayyad period magical amulet from a domestic context in Jerash, Jordan", *Syria* 93, 369–386.

Lichtenberger, A. (2003). *Kulte und Kultur der Dekapolis: Untersuchungen zu numismatischen, archäologischen und epigraphischen Zeugnissen*, Wiesbaden, Harrassowitz.

Lichtenberger, A., Lindroos, A., Raja, R. & Heinemeier, J. (2015). "Radiocarbon analysis of mortar from Roman and Byzantine water management installations in the Northwest Quarter of Jerash, Jordan", *Journal of Archaeological Science: Reports* 2, 114–127.

Lichtenberger, A. & Raja, R. (2012). "Preliminary report of the first season of the Danish-German Jarash Northwest Quarter Project", *Annual of the Department of Antiquities in Jordan* 56, 231–240.

Lichtenberger, A. & Raja, R. (2013). "Schicht für Schicht in die Vergangenheit", *Welt und Umwelt der Bibel* 1, 62–63.

Lichtenberger, A. & Raja, R. (2014). "Danish-German Northwest Quarter Project", in Kenkel, F. & Vieweger, D. (eds.), *With Trowel and Hightech: German Archaeological Projects in Jordan*, Berlin, 24–25.

Lichtenberger, A. & Raja, R. (2014). "Jarash Northwest Quarter Project", *American Journal of Archaeology* 118, 4, 643.

Lichtenberger, A. & Raja, R. (2015). "A hoard of Byzantine and Arab-Byzantine coins from the excavations at Jerash. 6: Jerash 2014", *Numismatic Chronicle* 175 (Coin Hoards 2015), 299–308.

Lichtenberger, A. & Raja, R. (2015). "An architectural block with altar-iconography from the North-west Quarter of Jerash", *Levant* 47, 1, 112–130.

Lichtenberger, A. & Raja, R. (2015). "Intentional cooking pot deposits in Late Roman Jerash (Northwest Quarter)", *Syria: Archéologie, Art et Histoire* 92, 309–238.

Lichtenberger, A. & Raja, R. (2015). "New archaeological research in the Northwest Quarter of Jerash and its implications for the urban development of Roman Gerasa", *American Journal of Archaeology* 119, 4, 483–500.

Lichtenberger, A. & Raja, R. (2015). "Aus der Traum vom Kulturerbe: Ein Strassenbau zerstört Teile der antiken Stadtmauer von Jerash in Jordanien", *Frankfurter Allgemeine*, 8 Apr 2015.

Lichtenberger, A. & Raja, R. (2016). "Living with and on the river-side: The example of Roman Antiochia-on-the-Chrysorrohas-formerly-called-Gerasa", in: Madsen, J. K., Andersen, N. O. & Thuesen, I. (eds.), *Water of Life: Festschrift for Peder Mortensen. Proceedings of the Danish Institute in Damascus* 11, Copenhagen, 98–117.

Lichtenberger, A. & Raja, R. (2016). "The Danish-German North-West Quarter Project at Jarash: Results from the 2011-2013 Seasons", *Studies in the History and Archaeology of Jordan XII: Transparent Borders* 7, 173–188.

Lichtenberger, A. & Raja, R. (2016). "Byzantine and Umayyad Gerasa: Results and findings from the Danish-German Jerash Northwest Quarter Project", Abstract from the conference: *Conspicuous Productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context*, Aarhus University, Aarhus, Denmark, 12 October 2016.

Lichtenberger, A. & Raja, R. (2017). "Archaeological research in Jerash and the Danish-German Northwest Quarter Project 2011–2016", Abstract from the conference: *The Archaeology and History of Jerash. 110 Years of Excavations*, The Royal Academy of Sciences and Letters, Copenhagen, Denmark, 2–3 March 2017.

Lichtenberger, A. & Raja, R. (2017). "Editors' preface", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 3.

Lichtenberger, A. & Raja, R. (2017). "Redaktørenes forord", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 3.

Lichtenberger, A. & Raja, R. (2017). "Mosaicists at work: The organisation of mosaic production in Early Islamic Jerash", *Antiquity* 91, 358, 998–1010.

Lichtenberger, A. & Raja, R. (2017). "New research in the Northwest Quarter of Jerash and its impact on Roman Gerasa", Abstract from the conference: *Regional Networks: Technological Transfers? Production and Consumption Patterns in Roman Pottery of the Decapolis*, The Royal Academy of Sciences and Letters, Copenhagen, Denmark, 1 March 2017.

Lichtenberger, A. & Raja, R. (2017). "Urban archaeology and the understanding of the past: Antiochia on the Chrysorrhoeas, also called Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 9–20.

Lichtenberger, A. & Raja, R. (2017). "Urban arkæologi og et blik ind i fortiden: Antiochia-ved-Chrysorrhoeas-også kaldet-Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 9–20.

Lichtenberger, A. & Raja, R. (2017). "Water management in the North-West Quarter of Gerasa/Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 121–130.

Lichtenberger, A. & Raja, R. (2017). "Vandforvaltning i Nordvest-kvarteret i Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 121–130.

Lichtenberger, A. & Raja, R. (eds.) (2017). *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus.

Lichtenberger, A. & Raja, R. (eds.) (2017). *Gerasa/Jerash: From the Urban Periphery*, Aarhus.

Lichtenberger, A., Raja, R., Eger, C., Kalaitzoglou, G. & Højen Sørensen, A. (2017). "A newly excavated private house in Jerash: Reconsidering aspects of continuity and change in material culture from the Late Antiquity to the early Islamic period", *Antiquité Tardive* 24, 317–359.

Lichtenberger, A., Raja, R. & Sørensen, A. H. (2014). "The Danish-German Jarash Northwest Quarter Project 2013 Preliminary Registration Report", *Annual of the Department of Antiquities of Jordan* 58, 39–103.

Lichtenberger, A., Raja, R. & Sørensen, A. H. (2013). "Preliminary registration report of the second season of the Danish-German Jarash Northwest Quarter Project 2012", *Annual of the Department of Antiquities in Jordan* 57, 9–56.

Mortensen, E. (2017). "Archive archaeology: Rediscovering Jerash in the digital archives", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 27–32.

Mortensen, E. (2017). "Arkæologi i arkiverne: Den digitale genopdagelse af Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 27–32.

Möller, H. (2017). "Ceramics in context: Interpreting life through pottery", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 59–66.

Möller, H. (2017). "Keramik i kontekst: Fortolkning af liv gennem keramik", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 59–66.

Peterson, A. (2017). "Medieval pottery from Jerash: The Middle Islamic settlement", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 67–74.

Peterson, A. (2017). "Middelalderkeramik fra Jerash: Den mellemislamske bosættelse", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 67–74.

Raja, R. (2012). *Urban Development and Regional Identity in the Eastern Roman Provinces, 50 BC-AD 250: Aphrodisias, Ephesos, Athens, Gerasa*. Copenhagen.

Raja, R. (2017). "New archaeological research in ancient Gerasa (Jerash): The Danish-German Northwest Quarter Project", Abstract from the conference: *118th Annual Meeting of the Archaeological Institute of America*, University of Toronto, Toronto, Canada, 5–8 January 2017.

Raja, R. (2017). "Zeus Olympios, Hadrian and the Jews of Antiochia-on-the-Chrysorrohas-formerly-called-Gerasa", in: Minchin, E. & Wade, J. (eds.), *Festschrift for Graeme Clarke: Studies in Mediterranean Archaeology*, Uppsala, 171–185.

Raja, R., Kalaitzoglou, G. & Lichtenberger, A. (2015). "Preliminary report of the second season of the Danish-German Jerash Northwest Quarter Project 2012", *Annual of the Department of Antiquities of Jordan* 57, Amman, 57–79.

Raja, R., Lichtenberger, A. & Sørensen, A. H. (2015). "Preliminary registration report of the second season of the Danish-German Jerash Northwest Quarter Project 2012", *Annual of the Department of Antiquities of Jordan* 57, 9–56.

Stott, D. & Kristiansen, S. M. (2017). "Mapping ancient Gerasa with remote sensing", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 41–46.

Stott, D. & Kristiansen, S. M. (2017). "Oldtidens Gerasa kortlagt fra luften", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 41–46.

Thomsen, K. (2017). "Gerasa: Mortar matters", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 83–88.

Thomsen, K. (2017). "Mørtelstudier i Gerasa", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 83–88.

Wootton, W. T. (2017). "Mosaics from the North-West Quarter of Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: From the Urban Periphery*, Aarhus, 89–98.

Wootton, W. T. (2017). "Mosaikker fra Nordvest-kvarteret i Jerash", in: Lichtenberger, A. & Raja, R. (eds.), *Gerasa/Jerash: Fra den Urbane Periferi*, Aarhus, 89–98.

Part of the southern side street, called decumanus, with colonnades on either side (Danish-German Jerash Northwest Quarter Project).

## PhD Thesis

- Peterson, A. H. (in preparation). *Middle Islamic Ceramics from the Northwest Quarter of Jerash*, Aarhus University.
- Pogoda, C. (in preparation). *Local Limestone Sarcophagi in Jerash*, Westfälische Wilhelms-Universität Münster.
- Thomsen, K. (in preparation). *Urban Life: Development of Mortar and Plaster from a Diachronic Perspective in Jerash, Jordan*, Aarhus University.

## MA Theses

- Csitneki, D. (2016). *Jerash Bowls: Typologie, Chronologie und Ikonographie einer feinkeramischen Gattung in Gerasa (Jordanien)*, Westfälische Wilhelms-Universität Münster.
- Egelund, L. (2017). *The House of the Tesserae: A Study of Cultural Changes and Continuities in Domestic Architecture from the Roman Period into the Early Islamic Period (749 CE)*, Aarhus University: Unpublished MA thesis.
- Hiort, D. M. (2013). *The Roman Horned Altar: An Analysis, Discussion and Contextualisation of the Material From Jerash*, Aarhus University: Unpublished MA thesis.
- Kristensen, S. B. (in preparation). *Reddish/Red Brown Ware*, Aarhus University.

## Team photos

- p. 71: 2011 team photo
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  - p. 74: 2014 team photo
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  - p. 76: 2017 team photo
-



2011 team photo (Danish-German Jerash Northwest Quarter Project).



2012 team photo (Danish-German Jerash Northwest Quarter Project).



2013 team photo (Danish-German Jerash Northwest Quarter Project).



2014 team photo (Danish-German Jerash Northwest Quarter Project).



2015 team photo (Danish-German Jerash Northwest Quarter Project).



SPECIALIST WORKSHOP:  
DANISH-GERMAN JERASH NORTHWEST QUARTER PROJECT



2016 team photo (Danish-German Jerash Northwest Quarter Project).



2017 team photo (Danish-German Jerash Northwest Quarter Project).

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**Danish-German Jerash Northwest Quarter Project**

<http://projects.au.dk/Internationaljerashexcavation/>

**Ceramics in Context**

<http://projects.au.dk/ceramics-in-context/>

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The city-wall of Jerash and some of the trenches, laid out in order to investigate the water pipes that brought water to the Northwest Quarter, can be seen above the modern road (Danish-German Jerash Northwest Quarter Project).



Mosaic from the Mosaic Hall. The inscription dates the mosaic to July AD 591, and the individuals mentioned in the inscription are all connected to the military unit numerus Electorum Iustinianorum (Danish-German Jerash Northwest Quarter Project).



**Specialist workshop: Danish-German Jerash Northwest Quarter Project**  
11 October 2017

**Project directors:**

Rubina Raja (Aarhus University)  
Achim Lichtenberger (Westfälische Wilhelms-Universität Münster)

**Project booklet**

**Editors:** Line Egelund, Christina A. Levisen, Achim Lichtenberger, Mie E. Lind and Rubina Raja

**Front cover:** The Artemis Temple in Jerash (Danish-German Jerash Northwest Quarter Project)

**Back cover:** View from Camp Hill down towards the colonnaded street, the Artemis Sanctuary and the modern city (Danish-German Jerash Northwest Quarter Project)

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