Abstracts

Session 1

Reflections on the development of urban archaeology over the last 25 years
Gavin Lucas, Professor of Archaeology, University of Iceland.
In this talk, I look back on the last 25 years of urban archaeology, with a primary focus on methodology and how archaeology has been conducted within towns and cities in Northern Europe. Although this conference focuses on Scandinavia, the development of urban archaeology in this region is intimately connected to neighbouring places and so in the first half of my talk I will draw on my own experiences from England and Iceland to discuss some of these connections as well as presenting the state of urban archaeology in Iceland to complement the previous four talks dealing with Finland, Norway, Denmark and Sweden. In the second part I will broaden my scope to reflect more generally on what has changed (or not) in the practice of urban archaeology since the turn of the millennium and what some of the main challenges are which remain today.

Brave New Urban World: The Emergence of an Urban Identity in High Medieval Europe
Peter Carelli, National Historical Museums, Stockholm.
A completely new urban concept was formed all over Western Europe, including Scandinavia, during the High Middle Ages. It developed in the course of the 11th century and reached full impact in the 12th and 13th centuries. Many older cities were then given new life, and hundreds of cities were newly founded. In Scandinavia several cities were founded where a new urban concept was established. What characterized these cities was a rapid increase in population, a densification of the settlement and increased specialization and division of labour.
In my paper I will discuss the High Medieval urbanization and try to explain the reasons behind it. My starting point is the understanding that the whole of Western Europe underwent profound changes in mentality during the High Middle Ages. The new ideas have been described in the research as a “cognitive revolution”, which resulted in a new way of thinking and acting, and a “mercantile revolution”, which resulted in new modes of economic action. An important point of departure in the understanding of the High Medieval urbanization is that Scandinavian urbanization was an integral part of the overall Western European development. The new urban ideas, and the changes they led to, were general and momentary, and therefore we cannot speak of either center/periphery or a successive distribution of ideas.
As I see it, the trigger which started the High Medieval urbanization wave was a changing view of urban supremacy which spread rapidly among the traditional city lords during the 11th century. The city lords – emperors, kings, nobles and ecclesiastical potentates – chose to voluntarily relinquish their traditional exercise of power, which until then was based on territoriality, and instead chose to exercise economic power over the cities. This meant a significant conceptual change as the cities were no longer seen as primary political seats of power but as important economic investments with expected financial return, i.e. a sources of income.
This development consequently led to urban organizational changes as the city lords handed over large parts of the urban power to the city inhabitants by granting them city privileges, a way of regulating and delegating urban power. The previously divided and almost powerless group of townspeople now began to organize as a collective and in a relatively short time came to constitute a very important and influential social actor. The civic collective came to aspire to deepening influence and even urban political autonomy. In many cities this development led to citizen-governed communes, already by the second half of the 11th century and the first half of the 12th century, and later to the emergence of the council institution.
The civic collective was intellectually shaped by the emergence of an urban identity. Within the High Medieval cities, a way of life developed that differed in several respects from life in the countryside. This led to conceptual changes that culminated in a collective awareness of the existence and uniqueness of urban life. The urban self-awareness gradually

developed into a specific urban identity that united the city dwellers, regardless of their social or economic position or group affiliation, and thereby created a collective sense of urban participation and belonging. This in turn meant that the civic collective, by using an urban identity, created, and reproduced, the High Medieval concept of the city.
An important part of the urban identity process was its materialization. Several examples can be highlighted that show how the new urban ideas were realized physically. The construction of city walls was a deliberate way to physically separate the cities from the countryside. The use of coins with urban iconography and the use of city seals was a way of creating common urban symbols, and through the construction of town halls and municipal palaces, urban institutions were created. All these elements can be seen as a conscious materialization of the urban identity, and as means of reproducing it.

The Worlds Within – the Diversity of Urban Life

Annika Nordström, National Historical Museums, Department of archaeology and Ancient History, Uppsala University.

In this paper I would like to address questions regarding *the human town* in premodern Sweden. Modern excavation methods in combination with an increasing number of scientific analyses and systematic metal detection have led to a significantly more high-resolution source material to analyze, a source material that potentially carries more information about people´s everyday lives.
Swedish urban archaeological research has traditionally not engaged in questions regarding relational gender studies. By studying different features of material culture in a contextual time/space level inspired by post-humanist performative perspectives and focusing on (classic) categories as for example gender, age, and class one can elucidate the townspeople in a (hopefully) more in depth and constructive manner. Simply put, posthuman perspectives focuses on the interrelations between humans and nonhuman others and allows for a wider analysis of different kinds of intra-actions between humans and objects as well as human and phenomena. There is also a feminist element to be traced in the view that the universal human in "humanism" seldom includes all humans and that rights and resources are being distributed trough for example gendered and class agendas. There are several variants of perspectives within the umbrella of posthumanism, in my work I have been influenced by Karen Barads relational performative perspective (ex. 2007).
The topic will be discussed through a few examples from contract archaeological excavations performed in mid-Swedish towns from the medieval and early modern period. The approach also opens towards a discussion of how the townspeople, through their practices and intra-action with the surrounding materiality, shaped and reshaped everyday life and thereby were a crucial part of the process of becoming urban.

Agriculture within the medieval city of Trondheim, Norway

Julian Cadamarteri & Synne Husby Rostad, Norwegian Institute for Cultural Heritage Research (NIKU).

In the period between 2015 and 2020 a large scale archaeological excavation and watching brief took place on the outskirts of the medieval town of Trondheim Norway, in total over 10 000 m2 were investigated. The material uncovered showed how the area had changed from the cultivated outskirts of the city to an area with scattered metalworking workshops in the late medieval period to the 17th centuries. Large scale excavations of the medieval infields surrounding the medieval cities have rarely taken place in Norway and the excavations highlighted several key questions relating to the cultivation within the medieval cities. Aiming to shed further light on the organization and intensity of the urban farming related to the citizens of the city has proved fruitful and promising direction providing new insights on the scale of the urban agriculture, and the argrarian aspects of the urban city. The excavations also showed limitations and pitfalls within the excavation techniques employed when investigating these archaeological remains. Particularly in investigating the homogenous layers of fossilized plow soil.
In 2022 a new possibility to investigate the medieval infields arose when a planned new building within the schoolyard of Trondheim katedralskole went forward. Building on the experience from the excavations at Torvet a new strategy for excavating and investigating medieval fields and gardens were instigated. Several questions arise from the investigation; To what degree were the fields and gardens able to provide the citizens with foodstuff and pasture? Which cereals and plants were grown and on what scale? Who were responsible for the cultivation and how was it organized? And what does the proximity and usage of the field systems tell us about life within the urban parts of the medieval city.

Urban Early modern houses: from excavations to standing structures, and back again.

Göran Tagesson, Dept. of History, Uppsala university

In the research projects House and household in Early modern towns 1600-1850 and Houses and Social Practices 1600-1850, we are studying houses from the Early modern period from a social point of view, the physical structures studied

as integrated in social practice. Houses in the archaeological record are studied together with preserved standing buildings, as well as written sources of owners and inhabitants in household reconstructions.
The number of houses and buildings documented from both medieval and early modern period has been tremendous during the last decades. A general recognition and use of modern documentation techniques, as well as methodological advances (contextual archaeology), in combination with a vast documentation material has made room for new aspects of the urban built structures. Today these are mostly well reported and published, further research however is not conspicuously common.
In my paper I want to present a general outline of new perspectives of houses from the period, scrutinized and problematized as social practice in the present research projects. A major challenge is to make use of the contextual archaeological method in order to understand the houses not as specific physical structures, but as life courses – as a series of events, entangled with human life and agency. These new perspectives also provide implications for future archaeological excavations; what should we look for, and what should we prioritise?

The King's Own City -archaeology in the fortress town Christianstad
Claes Pettersson Sydsvensk Arkeologi AB
In the aftermath of the Kalmar War, the Danish king, Christian IV decided that the defenceof north-easternScania had to be strengthened. The exposed border region needed a strongpoint; a replacement for the medieval towns - Åhus and Vä - which, like twenty parishes, had been devastated by the Swedish army. In 1614, Christianstad was given its municipal charter. It was founded on a strategically well-chosen site, Allön -a peninsula in the wetlands next to Helgeå River. Here the roads to Blekinge and Småland could be controlled, as well as the transport route along the river.The fortified city was built at a rapid pace. An area of 700 x 300 meters was created; new land was built up over meadows and marshes. Only then could streets be laid out and the first houses take shape. But by building on a virgin site, the principles of the Renaissance ideal city could be applied. This can be seen in the rectilinear town plan with its straight streets, two squares and carefully designed blocks. The city church, The Holy Trinity, is a masterpiece of Danish 17th-century architecture. The planned castle,however, ended with only a military storage building. Around the city, fortifications were built in the form of six-meter-high ramparts with ten bastions and two city gates, protected by ravelins. After only 44 years, at the Peace Treaty of Roskilde in 1658, the city was left in Swedish hands. The border fortress now became a town inside Skåne. It remained contested and was taken by Danish forces in the wars of1676 and 1710. But the Fortifications Commission of 1724 described the earthworks as “dilapidated and totally inadequate”. After a royal decision in 1748, extensive expansion and modernization started and continued for almost forty years. Christianstad became a garrison town with stores for the defence of the region. At the same time, its civil function as an administrative centre became increasingly important. In the following century, in 1847, the fortress was decommissioned. A protracted demolition work began which gradually transformed the city into today's open town centre. During the last ten years, archaeology has been able to change and enrich the image of Christianstad's complex and conflict-filled past. Investigations in the hinterland have shownhow the medieval urban landscape was changed by the decision to build a fortress. At The Rectory site (2015) it was noticed how building materials from the old cities were reused. The Garrison bakery (2018) provided insight in both the provision of food and appalling sanitary conditions. Excavations in the town fortifications have illustrated the methods used in building them, but also illustrated the extensive logistics required in a state mega-project; what impact ithad on an entire region and its inhabitants.Some of whom may be part of the skeletal material from the Holy Trinity cemetery (2018-2019) which is now being analysed. And the lessons learned in Christianstad may be applied to many of the similar sites in Scandinavia!

End of session 1

Session 2

"Why does she act this way"? - An oblique look at interdisciplinary cooperation, opportunities and limitations in archaeological observation, documentation and analysis work.
Axel Christophersen, Professor of Historical Archaeology, Norwegian University of Sciences and Technology (NTNU).

The citation is taken from a book of Astrid Lindgren, where a subterranean being wonders why two human legs are sticking out of the ceiling of her earth cave. In interdisciplinary projects, one can be confronted with such questions: What is this? Why is it done that way, etc.? Urban archeology in the Nordic countries has always been much about experimenting and working with natural sciences methods, old and new once. In the wake of such collaborative relationships, notorious challenges have arisen about how different scientific practice traditions are explained (or not) and assumed (or not) by the collaborative partners. Often this theme is reduced to a question of weak communication and a lack of insight into cross-disciplinary routinized practice patterns. But there are more than misunderstanding and superficial communication generating this challenge. It is worth thinking of the fact that in the last instance interdisciplinary cooperation is not about what one intends to do, but what one do. So, what do we do?

Market Square - hectaresize Town Excavations in 17-18th Century Turku, Finland, in 2018-2022.

Kari Uotila, Docent in Archaeology, University of Helsinki, University of Turku & Muuritutkimus Ab.

In total, about 2 hectares of historical city centre was under archaeological research as a project of a Company called Muuritutkimus. It has been the largest excavation in Finland. The main excavation area had mostly undisturbed layers and structures dating from mid-17th Century to early 19th Century. This excavation is an exceptional source for urban archaeology in early modern period.

The documentation was fully 3d based on laserscanning and visualization was mainly done with Matterport pro 2, photogrammetry with Osmo and iPhone and different type of drones. The technical toolbox of documentation was in process in every field season. In future – years 2023-24 - we are planning the excavations with robotics in fieldwork and automation in rapport process.

Today 3d-documentation is coming common and it gives more tools to use in fieldwork. Virtual excavations are today possible to do and in future it will be as a reality. That will chance the role of fieldwork in archaeology totally in 2020.

Looking at urban contexts from animal perspectives: a peek into zooarchaeological assemblages and archive records

Hanna Kivikero, University of Helsinki & Emma Maltin, University of Stockholm.

Zooarchaeological analyses have been used to interpret urban sites for decades. Species, cutmarks, sex, age, withering height and anatomical distribution are some of the aspects of analysis that are often used to understand animals in sites. Whereas zooarchaeological assemblages can give an idea of the animals from their physical residue, other aspects of faunal remains can be found from archive sources. Records, such as accounts, customs records, laws etc. are just some of the sources where animals can occur and represent information of animals from another angle compared to the zooarchaeological assemblages. These records are also informative in parts of animals that rarely found archaeologically, such as different types of animal fats and fat products. Also, the records can be focused on product names that do not resemble the zooarchaeological assemblages that are recovered and analysed. Occasionally, texts can also help to understand the lack of bone material in contexts.

Combining primary data from both zooarchaeological assemblages and archive records have in recent years proven to be a fruitful way of understanding the role animals had to people and societies. The two materials are fragmentary in their own aspects. When combined, it is possible to get a more comprehensive picture of the attitude towards animals and the processes behind the zooarchaeological assemblages. This paper will concentrate on different aspects of combining zooarchaeological assemblages with archival records to gain more knowledge of animals in urban contexts in the Baltic Sea. The main interest will be in traded species and products, with the aim of identifying the origin of the products, the scale of the trade and the purpose of the products in urban contexts. The added knowledge of traded animals will show the value of combining primary source material.

Seeing with other eyes: how technologies and the natural sciences are changing the stratigraphic interface

Sarah Croix, Associate Professor of Archaeology, Aarhus University.

This paper will reflect on some of the implications of using increasingly precise methods for capturing stratigraphic units during excavation, i.e. 3D laser scanning and micromorphology. Although operating on markedly different scales, their use in combination affords new opportunities for approaching archaeological interfaces, but also raises the question of their role in relation to macroscopic observations on site and to other types of data, i.e. artifacts in particular. These reflections will be based on the recent experiences from the Northern Emporium project in Ribe.

Single-year radiocarbon dating in nordic urban archaeology: Ribe and the importance of context

Bente Philippsen, National Laboratory for Age Determination, Norwegian University of Science and Technology (NTNU)

Radiocarbon calibration curves have improved significantly after the discovery of solar particle events and the addition of annual data to calibration datasets. In this study, we provide a new absolute chronology for Viking Age Ribe. 140 radiocarbon dates were calibrated with a purpose-made calibration curve, based on IntCal20 and additional tree-rings measurements for the ninth century.

We combine the radiocarbon dates with dendrochronological dates and the site's detailed stratigraphy, built up of clay floors and activity layers, in a Bayesian age model. We show that long-distance maritime trade began already around AD 750, as evidenced by artefacts imported from Norway. The expansion of trade, especially towards the Middle East, and other aspects of the beginning of the Viking Age such as Berdal style brooches occur in layers dated to AD 790 ± 10. We also identify the clay floor that was in use when the AD 775 solar particle event took place.

Finally, we apply the same techniques to radiocarbon dates of other Viking Age samples and sites from the literature. Recent aDNA results help to re-calibrate radiocarbon dates of human bones with greatly increased precision. We also explore the potential of re-calibrating and modelling legacy dates to improve the chronology of individual sites and their relations with other sites.

When high-precision radiocarbon measurements are combined with annual calibration curves and high-precision contextual information, radiocarbon dates become precise enough to be a relevant source of information for historical archaeology.

Echoes of the past – lessons from the use of GPR and interdisciplinary applications in Kristianstad's 17th and 18th centuries

Fredrik G. Larsson, Sydsvensk Arkeologi AB

Since 2016, Sydsvensk Arkeologi has used ground-penetrating radar (GPR) as a first step in its larger investigations within Kristianstad's historic town and the surrounding fortifications. The results from the mappings in Bastionen 6 (2016), Hovrätten 20 (2017), the Holy Trinity Cemetery (2018), and at Bastion Drottningen and the Contregarde (2020) clearly shows what potential the method holds under favourable conditions.

Added to this is the opportunity to use the rich contemporary source material stored at the War Archives in Stockholm. Close to 1,500 files deal with the city's fortifications and the other buildings that were of interest to the military authorities. When rectified maps and drawings from the 17th and 18th centuries are combined with GPR data, a solid foundation is created for future archaeological investigations. Ground drilling to check the presence of environmental toxins has also proven to be of important value. The drill cores have provided valuable information about the archaeological stratigraphy. Based on the information created by the mapping, important priorities are made possible, the interpretation work has been simplified and specialist expertise can participate at an early stage.

When carrying out our investigations, the focus has largely been on an interdisciplinary working method, where sampling for archaeobotanical, palaeoentomology and parasitology has yielded good results. The results from the garrison's bakery in the Hovrätten quarter deserve special mention in that context. Osteological analysis focused on the extensive skeletal material from the Holy Trinity Church cemetery have provided new knowledge about living conditions in a Scandinavian fortress town from the early modern era. The archaeological efforts could to a great extent be guided by the results of the initial mapping with GPR. Areas dense with graves could be avoided, while an apparently empty part of the churchyard turned out to contain the remains of the construction site of the church!

Photogrammetric documentation with the creation of 3D models has increasingly come into focus during recent years of investigations in the urban and fortress context. The use of drones in an urban environment may be hampered by current Swedish legislation but is a sector undergoing rapid development. Especially large-scale complex well-preserved fortifications, but also sections with complex stratigraphy lend themselves extremely well to 3D-documentation. What is created is a representation of the object that is as close to reality as possible. A tool suitable for further studies and research.

Our talk focuses on the experiences made during the past decade's archaeological efforts in Kristianstad, on results made possible through far-reaching cooperation between archaeology and natural science. We want to underline the importance of a continuous dialogue between technical staff and archaeologists during all phases, from preliminary studies to mapping, excavation and into the interpretation phase and on to the publication. Through an interdisciplinary working method, conditions are created for an ongoing build-up of knowledge. Opportunities are created that makes it possible to reach outside the traditional archaeological framework!

Archaeological geophysics in an urban context

Jani Causevic, Digital archaeology, The Norwegian Institute for Cultural Heritage Research (NIKU)

In recent years archaeological geophysics has slowly gain approval in Norway. Large scale motorized geophysics has supplemented conventional archaeological test trenching. The combination of methods has been used to better survey a potential archaeological site and prepare for archaeological excavation.

In Norway archaeological geophysics in urban context has been explored in varying degrees, and also with varying results. This is because geophysics in an urban context is complex, due to thick archaeological deposits and constant occupation, from historic times all the way to modern times.

In Norway there can be argued that there is a policy to not disturb the archaeological sites. Archaeological deposits is a non-renewable resource and in situ preservation of the archaeological sites is preferred. In order to get an overview of what is under the ground before and after archaeological excavations, NIKU's archaeologists have in recent years tested the use of archaeological geophysics inside the medieval cities, with promising results. This also gives the opportunity to look deeper into the underground than the interventions in question.

The use of ground penetrating radar (GPR) gives the archaeologist the possibility to explore the archeology in areas where there will be construction or intervention but can also examine the surrounding areas to put any finds into a wider context. GPR will probably never fully substitute conventional archaeology but can be used as a supplement to existing methods.

In this presentation, I will show some resent results and discuss the possibility of using GPR in medieval context, and the challenges encountered during the recording and interpretation process. I will also show how this strategy can provide an addition dataset for archaeologist and provide a better understanding of urban archaeology in Norway.

The use of iron in early modern buildings and the use of metal finds as a source material

Linda Qviström, Dept. of History, Uppsala university.

In the Early Modern period, a number of things changed both in the production and the consumption of iron (and steel). The production increased, prices were generally getting lower and the making of bar-iron made the secondary manufacturing of metal objects easier. In Early Modern buildings an increasing use of iron, and also a shifting role of the material, is noticeable. The growing and altering use correlated not only with a changing iron production but also with contemporary changes in dwelling culture, building traditions and building techniques. More iron started to be used for constructional elements, and also in association with a growing number of details like panels, floors, ceilings, doors, and windows.

Although a lot of research concerns different aspects of production and trade, the consumption of iron is still in many cases understudied. The use of iron in Early Modern buildings in Sweden, or in fact in buildings from any historical period, is a case in point.

In an attempt to address how iron has been used in relation to contemporary variations in building traditions, the changing use of buildings and rooms, and also in relation to the practices around housebuilding, within the interdisciplinary HASP-project* I am using case-studies mainly from Kalmar. In these a combination of written sources, such as fire insurance documents, and preserved buildings are being consulted. Another important source material in this context is artefacts from archaeological excavations. Not only can these provide insights into more and varied social contexts, but combining and comparing the materials also makes it possible to discuss a number of other questions. Reuse is one example. A comparison with the use of iron in preserved buildings could also contribute to the understanding of the excavated structures themselves. What types of nails and fittings have been used in which contexts? Is it possible to tell from this if a room has had a wooden floor, a ceiling, windows, and wooden panels? Trying to answer questions like these highlights a number of issues with archaeological documentation. Although large quantities of nails and fittings are found in urban contexts, only a few of them are being conserved and many are insufficiently recorded. Looking at the material from recent excavations in Norrköping and Kalmar, it is difficult to find out if objects such as nails have been collected and recorded at all. Most of these excavations also lack outspoken conservation policies.

These problems, as well as the potential value of iron artefacts as source material, will be addressed in my paper.

*Houses and Social Practices in Swedish Towns 1600-1850

Future preservation of past life: A multidisciplinary investigation into preservation of ancient biological remains from medieval cemeteries

Hege Hollund, The Museum of Archaeology, University of Stavanger

In the study of past humans, few finds are more telling than remains of the humans themselves. Bone and teeth have always been important evidence for archaeologists and have only become more so with the advent of new methods such as ancient DNA and protein analyses. Such biomolecules tell stories of individuals and populations through time. Unfortunately, the material is sensitive to decay and contamination. This may compromise analyses and limit our ability to make skeletons talk. It is thus important to understand how biological remains degrade or preserve. This is not straightforward. These are complex materials buried in a complex environment for hundreds and thousands of years. Furthermore, the biomolecules are invisible to the naked eye. What factors determine the preservation of archaeological biological remains at different levels, from macro to molecular level, in and ex situ?

To investigate this question, the Future Past project (2020-2025) is carrying out an excavation as well as environmental monitoring in a medieval cemetery in Stavanger, Norway, in addition to the analysis of skeletal remains in the collections of the city's university museum. Our project combines traditional archaeology with environmental science and molecular biology, using state of the art methods to analyse the biological remains and environmental conditions. This includes genetic analyses of microbial DNA in bone (metagenomics analyses) which constitute a source of contamination in aDNA-studies. The biomolecular data will be correlated with more traditional parameters describing the condition of the bone, the local burial environment in the grave, the condition of the archaeological deposits, and the regional environmental context from medieval to modern time. In addition, palaeoentomology and soil lipid analyses will provide biomarkers reflecting taphonomic processes and burial environment.

Exploring the relationship between material and environment will provide new knowledge on the bioarchaeological information potential of deposits, grave content and skeletons, depending on environmental conditions and degradation patterns. This is of importance for adjusting and improving conservation and heritage management methods and procedures.

In-depth analyses of skeletons will furthermore illustrate the value of the material as an archive of lived life. Where did the first Stavanger urban dwellers come from? How did their lives compare to those in rural areas considering diet and health?

This paper will present the project, report on the work so far and preliminary results.

In the first year of the project we have started taking samples from skeletal collections from Rogaland. This includes material from the city of Stavanger, as well as from medieval cemeteries across the county. Samples are being taken for various chemical and biomolecular analyses both to assess preservation but also to say something what they ate, and where they came from. We have also carried out limited trenching within and outside Stavanger cathedral, to find the remains of the oldest cemetery we know once was there. Unfortunately, this work gave a negative result due to modern disturbances that have destroyed or removed older remains. At the same time, we have been involved in another excavation being carried out underneath the cathedral floor in connection with an ongoing restoration project. Here, many graves have been found, with grave material of highly variable preservation levels. We have taken soil samples from graves and soil profiles within the church, that will give us insights into the preservation conditions.

Carrying out an excavation next to a medieval cathedral during its restoration is not a straightforward task. The timing of the excavation has been pushed to spring 2023. The first results of isotope analyses of medieval skeletal remains from the region suggest that people did not venture far as all display a local ?signal?. Isotope analyses of tooth enamel can reveal whether a person is born and raised locally or moved there later in life. Preliminary analyses of material from graves inside the church show that the variable preservation conditions may be connected to the method of burial, perhaps the wood species used in the coffin. A grave with a completely pulverised skeleton may lie directly on top of another grave with a well-preserved skeleton. A range of different plants have been identified by the analysis of pollen and seeds found in soil samples. This may also tell stories of grave rituals, or more profound applications such as dealing with the smell of rotting bodies within the church. Certain plants could have affected preservation of the human remains, either positively or negatively.

The heterogeneity between urban residents - using skeletal remains as a primary source to understand life in medieval towns

Vicki R. L. Kristensen and Dorthe D. Pedersen, Unit of Anthropology (ADBOU), Department of Forensic Medicine, University of Southern Denmark.

Life in medieval urban populations is rarely fully understood through traditional historical and archaeological sources as socioeconomic status in towns is complex both between different parishes and within the same parish. However, by using an interdisciplinary approach involving both archaeology and biological anthropological analysis new insights into this heterogeneity of town people can be revealed.

As part of the Danish Research Council funded project TheCityDwellers data from 1055 skeletons and associated archaeological data were analysed. The skeletal remains dated to AD 1050-1555 were excavated from six urban parish

cemeteries from Viborg, Denmark. Skeletal data provided information about the presence of bone involving tuberculosis, trauma, stress, and mortality. The skeletal data was studied in the light of archaeological data about the dating and social status of the dead.
The combined archaeology and anthropological approach revealed that graves from two excavations that were thought to belong to the same cemetery site, Sct. Drotten, likely belonged to two different sections or two cemeteries located adjacent to each other. Furthermore, the analyses showed great differences between the six parishes both regarding the prevalence of tuberculosis and mortality patterns. This indicates a complex social stratification of the residents in medieval Viborg.
Even though this study does not provide a clear and unanimous picture of life in town, it shows how multifaceted the medieval urban scene was. The presentation is an example of how biological anthropology using skeletal remains as a primary source can bring additional knowledge to aid history and archaeology.

End of session 2

Session 3

Bergen and Borgund, 1950s modern medieval archaeology
Gitte Hansen, Professor of Medieval Archaeology, University Museum of Bergen.
Today's excavation data will be legacy tomorrow! In Bergen we boast that modern medieval archaeology started in western Norway. What were to become huge archaeological excavations were initiated, in the deserted town Borgund outside Ålesund (1954) and in Bergen (1955) after the fire which devastated 5000m2 of the old wharf Bryggen. Remains of ordinary medieval people's settlement, trading and harbor areas were for the first time treated as archaeological sources. Data collected from Bergen and Borgund between 1954 and 1979 represent the vast majority of finds in the University Museum of Bergen's medieval archaeological collections. The accessibility and usability of sources from the two urban sites represent two extremes due to differing conservation and scientific curation strategies employed. With examples from excavations in Bergen and Borgund the paper addresses how material and data from older excavations may be activated in today's research. This entails a discussion of strategies for collecting nonrenewable sources during fieldwork and accessibility and preservation of archeological materials for future research and dissemination.

Old materials – new insights: How to activate older datasets into current research?
Jette Linaa, Affiliate Associate Professor of Archaeology, Aarhus University and Curator, Moesgaard Museum.
The urban archaeology of today looks back on an almost century-old tradition. The magazines of every archaeological museum is bursting at the seams under the pressure of artefacts and biofacts collected through decades, and yet the potential of this rich bank of archaeological records for current research questions remains largely unrealized. The huge datasets are rarely activated in current archaeological research, due to the methodological challenges posed by varying recovery- and registration practices across time and place. To draw out iinformation from thousands of objects from numerous excavations of every age and standard is a challenging task, and this paper aims to present how such challenges has been overcome and the materials activated through careful contextualization, considerations on source value and critical thinking on the nature of things. Examples will be drawn from research in migration, inequality and urban identities.

Swedigarch – Swedish National Infrastructure for Digital Archaeology
Eva Svensson, Professor of Environmental Science, Swedigarch & Karlstad University
The ambitions of Swedigarch, the Swedish National Infrastructure for Digital Archaeology, is to promote and enhance digital archaeology and interdisciplinary research on our past and provide knowledge and information useful for society in promoting sustainable development. The infrastructure will catalyse a new generation of data-intensive interdisciplinary research on long-term human-environmental dynamics, to address present and future challenges in landscape and resource management. Swedigarch will facilitate the production of aggregated and harmonised datasets, previously unmatched in scope, fulfilling the demands for cutting-edge integrative, interdisciplinary research on long-term socio-environmental dynamics. Swedigarch will enable new approaches for digital methods, reinvent

archaeological research agendas, and ensure that Swedish archaeology is part of the data science revolution, including ”Big Data”- archaeology.
Swedigarch will target researchers undertaking complex analyses of past environments and demographics, to contribute to the understanding of long-term human-environmental dynamics and sustainable development. Another userbase will be archaeologists creating or seeking integrated datasets from excavations, prospection and landscape surveys and other sampling situations. Swedigarch aims to provide the full range of archaeological, palaeoecological, and eventually heritage science data. Our endeavour is to become the standard tool for users of all archaeological data, such as researchers, heritage managers, developers, and planners.
For historical archaeology in urban settings, there are both special challenges and possibilities in regard to Swedigarch, and ”Big Data”-archaeology, such as massmaterials from unique sites. Therefore, we would be grateful for insights from urban archaeology on how to improve Swedigarch.

Let’s not forget the old and dead. Turku Cathedral and Church of Holy Spirit as part of urban archaeology and future research

Liisa Seppänen, Aalto University, Helsinki University & Turku University.

Turku, the oldest town of Finland, has frequently been excavated for more than a century. All in all, about 600 excavations of different scale have been conducted in the old part of the city, mainly in connection with construction projects. Research projects have often been catalysed by current or recent excavations while the materials excavated in the past seem to remain omitted and even abandoned. This is mainly explained by the lack of resources and problems related to deficient documentation and post-excavation work. Unfortunately, both explanations are very valid. However, these materials from old excavations are equally important than the more recent ones forming valuable evidence from the past and would thus be treated accordingly in collections and deserve to be included in new research.
In this presentation, I am highlighting two sites in Turku which both have revealed a manifold range of material and evidence and have been excavated several times. The other one is Turku Cathedral where the excavations were carried out in the 1920s and 1970s. The other site in question locates on the other side of Aura River and comprises the remains of the church of Holy Spirit, a graveyard with hundreds of burials and buildings from the early modern period. This area was first excavated in 1872 and since then more than 20 excavations have been conducted on site. The main part of the material was unearthed in excavations in the 1960s and 1980s. Although many studies have already been made, most finds are still unprocessed, unlisted, and unstudied. The same situation has prevailed with the material from Cathedral apart from a collection of burial clothing studied in the 1950s.
The aim of this presentation is not only to discuss these abandoned old materials and measures that have already been taken to promote the preservation, conservation and research of these materials in recent years, but to point out that churches and graveyards in urban environments are also an important part of urban archaeology.

Small favours. Medieval Material Culture.

Sigrid Samset Mygland, Bryggen Museum.

Material culture is a key concept within urban medieval archaeology. For long, the artefact (as well as the cultural layers in which it was found) was considered a curiosity rarely worth academic attention. Today, the same artefact produces excitement. ʻThingsʼ have proved a unique source material, not least based on so-called ʻsmall storiesʼ and a ʻbottom-up perspectiveʼ. At the same time, frustration lingers. Modern medieval archaeology may have let go of the parental hands of history, art history, ethnology and museology, but our storerooms still burst with an at times unmanageable amount of pottery shards, leather waste and all kinds of wooden articles. The struggle with many old excavations – no matter how ground-breaking – alongside insufficient excavation reports and analyses, is real. Again and again, methodical and theoretical obstacles need to be overcome before the archaeological Middle Ages may be revealed. The invaluable remnants of past lives are not for the faint-hearted.
First and foremost, however, medieval material culture is a blessing. This presentation examines the medieval archaeological artefact, based on my studies of women and children from Bergen and the international trading area Bryggen throughout the Middle Ages. Here, approximately 15,000 artefacts and parts of artefacts from the so-called Bryggen excavations (1955–1968) were activated to illuminate especially women, gender and gender composition. The investigations were challenging, with a focus on a chronologically and quantitatively restricted artefact material of which the representativity and gender attribution are debatable. Despite various methodological and theoretical challenges, though, it proved possible to shed new light on aspects of women and gender – both in past societies in

general and within this urban medieval context in particular. Indeed, material culture represents endless possibilities for exploring patterns of human life and activity on a broad level in time and space.

Excavating excavations. Research on nonpublished excavations in Ribe.

Michael Alrø Jensen, Museum of Southwest Jutland.

Ribe, situated on the North Sea Coast of southwest Jutland (Denmark), was founded around AD 700 as the first real emporium in Scandinavia. The town experienced renewed rapid growth during the late 11th and 12th century when the town expanded also west of the cathedral center in previously uninhabited areas. Between 1993 and 2000 this area saw several large rescue excavations, all in all 4000 m2 covered with up to 3.5 meters of stratified cultural layers.

The largest of these excavations, Danielsens Tømmerhandel (Danielsen's lumber yard) was the most expensive excavation conducted in Denmark prior the present Museum Act to which it was a contributing factor. The excavation was caused by a private housing project and therefore paid by the Danish state. The funding was insufficient and as many other larger urban excavations in Denmark it was never published nor proper analysed.

The nonpublished excavation material has now been fully digitized as part of an ongoing research project. The purpose is to examine Ribe's urban fabric and merchant networks between 1050 and 1250 AD – the formative phase of the Danish town history before Lubeck and later the Hanseatic League became a dominant factor in Scandinavian and Baltic trade. The project is part of a three-volume publication project funded by Dronning Margrethe II's Arkæologiske Fond and by Aage og Johanne Louis-Hansens Fond.

The research project is based on a digitization of both the drawings and the finds material. This was carried out gradually by several curators from 2014 and onwards. The first step was to record the 130.000 finds of the excavations in the database of the Museum of Southwest Jutland which has since been made public as SOL Samlingen Online. The finds underpin Ribes close mercantile connections to Friesland, Flanders and the Rhineland as well as Normandy, England and Norway. As a whole the town appears as an integrated part of northwest Europe's material culture.

The second step was to apply GIS, making it possible for the first time to create an overview of the archaeological structures which include archaeological and architectural features not known from other towns in present day Denmark. Building remains and several special finds indicate an aristocratic environment associated with trade. By the middle of the 13th century large parts of the quarter were donated to various convents and the social environment changed.

The purpose of the paper is to illustrate the great potential of applying GIS and contextual analysis to the backlog of former urban excavations in Denmark. Today big excavations in Danish Medieval towns are rare, since most developers choose on-site preservation instead of excavation. As a consequence we should shift our focus towards unlocking the hidden results of past excavations.

A City at War: Visby 1288-1525

Anders Andrén, Stockholm University.

In this paper, a seldom discussed issue in urban archaeology will be studied, that is towns and warfare. This theme is seldom discussed, because physical traces of violence and warfare are often lacking in the archaeological records. The starting point of this paper, is the town wall of Visby, and field work on the town wall, carried out during 25 years at the end of the nineteenth century and the beginning of the twentieth century. This field work was conducted by the medieval archaeologists Emil Eckhoff (1846-1923) and Otto Janse (1867-1957), and their field work was published in two comprehensive volumes in 1922 and 1936.

Town walls are often regarded as mere symbols of urban independence, also expressed in for instance town laws and urban councils. But in the case of Visby, the town wall has clear "scars" of warfare. The publications from 1922 and 1936 are very condensed and partly difficult to understand, but in a dialogue with the still standing town wall, it is possible to identify six rebuilt breaches, which are possible remains of medieval warfare. The breaches are rebuilt as fortifications, in contrast to later post-medieval damages on the town wall, which are just filled-up gaps, often built in dry-stone constructions. The six medieval breaches can be linked to six different events of warfare, through the stratigraphy of the masonry, the location of the different breaks, including the surrounding contexts, and later local traditions from the seventeenth and eighteenth centuries. It turns out, that the rebuilt breaches represent direct assaults on Visby, as well as symbolic acts of surrender to an enemy, without direct attacks on the wall.

Based on this case study from Visby, more general questions of towns and warfare will be discussed at the end of this paper. This concluding section will deal with urban military organization as well as towns as contested centres of wealth and power.

A medieval pottery assemblage, from a 1990s excavation.

Erik Johansson, Department of Archaeology and Ancient History, Lund university
In 1990, archaeologists from the Kulturen museum carried out a large excavation in the town district of Gyllenkrok (Kv. Gyllenkrok 3, 4, 5) in Lund. The excavation yielded a relatively substantial High Medieval pottery assemblage, which I am using as a case study in my PhD project on ceramic change. This material comes with both restraints and possibilities. The main positive aspect is the quantity of sherds, where hard greyware and glazed redware comprises 27.8% of the total material. On the negative side is the low chronological resolution of the phases, a result from the excavation being carried out in a grid of 2x2x0,2-meter squares, as was a common practice back then.
This paper will discuss some of the challenges and possibilities of using a ceramic assemblage like this in order to understand how, and ultimately why, the pottery changed in the 12th and 13th centuries, drawing on the analysis of fabrics and rim-forms, and subsequent comparison with other pottery publications. This kind of analysis places the Gyllenkrok assemblage in a wider Scandinavian/North-West European context, informing us of both contacts and influences, as well as chronology. However, the low chronological resolution of the phases, and lack of single context information, poses problems when studying the dynamic relations between for instance Baltic ware and hard greyware, or between regional glazed redware and Flemish highly decorated ware.
With this in mind we turn to the development of this area during the Middle Ages, as we want to understand the socio-economic setting for the ceramic culture. The Gyllenkrok district changed drastically during the 12th century and its proximity with the church of St Stefan provides an interesting setting, as this was being rebuilt from a wooden stave-church into a stone church during this period. The Gyllenkrok area also housed a large half-cellar building belonging to town elites. These changes in the built environment provides an example of who the people were behind the ceramic change.
So, what limitations do we face when analysing a ceramic assemblage like the one from Gyllenkrok, and what knowledge can we expect to gain?

A Registration Praxis for Clay Tobacco Pipes With an Awareness of Smokeways

Robert Bergman Carter, Department of Archaeology and Ancient History, Lund University
In the Nordic region, clay tobacco pipe fragments in general, and bowls in particular, recovered from archaeological excavations have traditionally been viewed almost exclusively as chronometric artefacts. Little attention has been paid to attributes that relate to the manners in which these pipes were applied in negotiations of social identities. My PhD project explores how variations in elements of smoking practices as expressed in the documentary record can be identified in archaeologically recovered pipe assemblages with the aim of investigating if and how clay pipe fragments can be applied to make salient aspects of negotiations of socioeconomic status in the past through a concept referred to as smokeways. As part of my PhD project, I have identified smokeways in documentary sources that are believed to partially reflect the social status of their users, and which may be visible on recovered pipe fragments as variations in production quality of pipes and their relative price, as well as bite marks and modifications. The recording of these attributes has been integrated to a recording practice that also contains traditionally employed chronometric attributes of clay tobacco pipe fragments. This enables datable pipe assemblages to be juxtaposed to equally datable views on smokeways in the past, and allows for comparative analyses of synchronically and diachronically diverse and shifting smokeways.This paper presentsa recording praxis for clay pipe fragments with particular focus on attributes related to price and production quality drawn from a comparative study of archival material and intact pipes recovered in Stockholm in 1984. Results indicatethat thesuggestedrecording practice can activate pipe fragments as indicators of socioeconomic statusand shows potential fortherecovery and inclusion of stem fragments infutureclay pipe analyses.

The City Space under the Town Hall Square: A Digital Knowledge Pool for Physics, Geology, and Cultural Heritage

Tina Rasmussen & Niels Henrik Andreasen, Museum of Copenhagen.
Accurate and detailed 3D city models are popping up everywhere. These virtual models are increasingly used to handle spatial tasks in the fields of urban planning, transportation, and environmental affairs. As the social, ecological, economic, and infrastructural challenges we face in the city continue to increase, the world is becoming ever more complex. Meanwhile, the effects of rapid changes on buried heritage in the underground urban space are becoming more and more difficult to assess and appreciate.
The Museum of Copenhagen and Geo are digitizing resources from several paper archives and combining geotechnical drill data with archaeological records and historical maps. The goal is to make obscure data visible and accessible to everyone. By providing a means of realistically depicting geological and archaeological data, the web-based 3D model of the Town Hall Square integrates the natural landscape and geo-referenced archaeological data. The 3D city model makes it possible to display physical and historical changes in four “time-steps”, and one can follow the development of

central Copenhagen from prehistory until the catastrophic fires of the 18th century. Along with the visualization functions, it is possible to access articles about historical locations and excavations directly from the model. Our goal is to enhance and translate existing geotechnical and archaeological data into interactive storytelling designs.
The pilot project is an initial small-scale implementation around the Town Hall Square, where, not least, the Metro excavations in the past 25 years have provided invaluable new knowledge. The pilot is used to prove the viability of a scaled-up project that involves all of Copenhagen, and which can be used as an instrument and data interface for urban planning, heritage management and administration.
By collating and mapping otherwise passive data, the project presents a significant resource that allows researchers to better understand the mutual relationship between archaeological structures on a larger, spatial scale as well as their connections with underlying geology. Standardizing and organizing old data will help make it searchable and assist researchers in evaluating existing and future data.
Finally, the pilot demonstrates a need to improve awareness of how we collect data in urban settings and aims at promoting a smoother collaboration between the archaeological authorities, city administration, the construction industry and academic research. The aim of such collaboration is the conservation and monitoring of underground heritage.

Unraveling the urban palimpsest through maps and written records
Morten Søvsø, Museum of Southwest Jutland
A whole range of different written sources and maps are available for the study of Danish Market towns and their development over time.
We have precise cadastral maps showing all plots, streets, harbors, public buildings etc. from the late 18th or 19th C. People living in the houses on the plots are known from the 1801 census and onwards. The houses they lived in are described in detail in the fire insurance from 1761, 1801 or later.
Going further back in time there is the 1682 Grundtaxt. From many towns there are even older tax lists or land registers going back to Medieval times.
Lots of historic houses were demolished during the late 19th or early 20th C. Though gone today their appearance (and age) can often be studied on historic photographs.
And finally, there is the existing town itself with its existing plot structure, street grid and standing structures.
Ribe is perhaps the best-preserved Medieval town in Denmark. Here, using GIS-systems, we have been able to reconstruct the plot structure and standing structures with almost 100% precision in 1801, 1761 and 1682 combining information from maps, written sources, photos, excavation and the existing town.
Further back in time 1:1 plot reconstruction become more difficult. Yet, important new insights about Ribe's Medieval market square and other parts of town have been gained from tax lists and land registers.
The paper demonstrates the results of this work method. Keeping the results from Ribe in mind, it is suggested that applying it in other Danish market towns would probably produce a whole new range of insights.

Gamle plantegninger, fra illustrasjoner til forskningsmateriale.
Therese Marie Edman, Norwegian Institute for Cultural Heritage Research (NIKU)
Det finnes store mengder data fra utgravninger i norske middelalderbyer i form av tegninger, lister, kontekstskjemaer og dagbøker. Mye av dette er digitalisert og ligger på nett, men er det tilgjengelig for forskning?
Med plantegninger fra Oslo som eksempel vil jeg vise hvilke problemer som gammelt materiale kan by på, men også hvilke muligheter som det tilbyr om vi tar oss tid til å behandle det.
Plantegninger av kontekster, ruter og faser finnes i mengder fra utgravninger i Oslo fra de første undersøkelsene på 1800-tallet og fram til digitale innmålingsmetoder overtok på 2000-tallet. De dekker byene som et lappeteppe av undersøkelser. Plantegningene kan være nydelige å se på og lette å lese og forstå, men på tross av dette er det vanskelig å bruke dem sammen på tvers av tid og sted. Digitale innmålinger er ikke pene å se på og ikke nødvendigvis lette å lese, men de har den fordelen at de kan legges inn i et GIS og brukes til å finne og vise større sammenhenger. Hvis innmålingene i tillegg har gode metadata kan man gjøre analyser på et stort materiale på mye kortere tid enn det er mulig å gjøre manuelt.
Det er flere prosjekter i gang for å tilgjengeliggjøre de senere tiårs digitale data. To eksempeler er ADED-prosjektet ved universitetsmuseene i Norge og Urdar ved Universitetet i Uppsala i Sverige. Det er et stort og viktig arbeide som vil tilgjengeliggjøre store mengder digitale data på tvers av enkeltutgravninger. Men mye av materialet som vi ønsker å forske på er ikke digitalt. Eller i beste fall tilgjengelig som en pdf eller en jpg. Derfor sitter det mange arkeologer rundt omkring og georefererer og vektoriserer gamle plantegninger nettopp fordi det å ha disse dataene tilgjengelig med en

faktisk kartreferanse er gull verdt. Dessverre blir de ofte liggende på en datamaskin eller en prosjektmappe gjemt bort for resten av verden, som oftest uten metadata som kan fortelle hva de faktisk inneholder.
Jeg ønsker å snakke litt om hvordan man kan behandle plantegningene slik at de kan brukes mer aktivt i forskning og forvaltning, samt hvilke problemer og muligheter det kan føre til.

Stavanger – the Metropolis of southern Norway and its little-known medieval remains...
Volker Demuth, University of Stavanger.
Although being the third largest urban settlement in modern Norway, with the oldest existing medieval cathedral in the country and historical seat of the bishopric for large parts of southern Norway, Stavanger is a sleeping beauty for urban archaeology. In the last years primarily the early phases of Stavanger and how far it can be called a town were in focus of archaeological and historical research. Recently rescue and research excavations in the cathedral draw the attention of scholars and the public.
The largest urban archaeological excavation in the town was however undertaken already in 1968 on the site "Skagen 3". Since then, only minor archaeological investigations have been carried out. The material from the 1968 excavation and other archaeological surveys is stored at the magazines of the Museum of Archaeology, but aside of an informative, yet preliminary publication from 1971, these and other urban sites have not been subject for more detailed research. However, finds and documentation of the old excavations are preserved and provide a solid base for archaeological examinations of Stavanger's medieval history.
In the last years several researchers from the Museum of Archaeology in Stavanger have started to investigate the medieval and early modern material from older excavations from new angles. For example, scientific analysis of isotopes from human skeletons, which were excavated by the cathedral in the early 20th century, have provided information about the changes in the diet of the inhabitants of the town (Denham, Hollund, et. al. 2016). The human remains are currently objects for a larger, interdisciplinary research-project.
The finds from the excavation at Skagen 3 in Stavanger show distinct similarities to the material from the large Bryggen excavation in Bergen, Norway's largest and earliest urban archaeological examination. The objects in the magazines provide a broad insight into medieval material culture outside the major trading hub Bergen. A reassessment of the finds offers a new perspective on medieval inhabitants of Stavanger, their socio-economic networks, and everyday issues. Amongst the objects are even pieces which are hitherto unparalleled in Norway, which can put the town on international archaeological site map.
It is not very likely that development needs will enable larger excavations in Stavanger in near future. Any new archaeological perception of medieval and early modern Stavanger depends therefore on thorough examinations of finds and documents from museum stores. Initial attempts to investigate this old material on basis of new theoretical, methodological, and technological approaches show promising results and encourage further research. The paper intends to discuss

End of session 3

Session 4

New ways for Urban Archaeology?
Søren M. Sindbæk, Professor of Archaeology, Centre for Urban Network Evolutions, Aarhus University.
Since 2015, the Danish National Research Foundation's Centre for Urban Network Evolutions at Aarhus University has explored new approaches to urban archaeology in East Africa, the Middle East, and Northern Europe. Taking in benefits from the biomolecular "3rd science revolution", complexity science and from "high-definition" digital research methods, UrbNet has aimed to cultivate an archaeology focused on networks, heterogeneity and individual experience, for the 21st century. A diverse portfolio of collaborations with museum partners have framed experimental approaches to field methods, material analysis, and public presentations. With a point of departure in a critical review of current research, this presentation seeks to define pointers for future practice.

Bright lights, big city - Urban Archaeology in yet another Age of Uncertainty.

Stefan Larsson, PhD, Cultural Environment specialist/Archaeologist, Swedish Transport Administration.
In this paper I will put forward some personal thoughts and reflections concerning "The Future of Urban Archaeology in Practice and Society" and the role and relevance of Urban Archaeology of today.
The future is always hard – not to say – impossible to foretell. But looking at the present I dare say that the last decades have witnessed an impressive row of technological development concerning the production and processing of an ever-increasing amount of data as well as considerable ontological achievements and the more or less merging with the natural sciences.
We are off course facing a whole range of challenges, internally as well as externally, but by widening our horizons yet further and working more closely with other fields of urban studies and urban planners, there is good hope for the future.

Planning with urban archaeological heritage for future cities
Torgrim Sneve Guttormsen, Archaeologist and Research Professor, The Norwegian Institute for Cultural Heritage Research (NIKU).
The presentation will use the newly finished JPI-CH research project '*Curating Sustainable URBAn Transformations through HERItage'* (CURBATHERI–Deep Cities, project period 2019-2022, see https://curbatheri.niku.no/ and https://www.deepcities-toolbox.unifi.it/) as a lens for discussing the topics for this session on urban archaeology regarding trends for the future, role in contemporary society, future challenges, and institutional collaborations. In our project we have launched the concept 'Deep Cities' as a methodological approach for understanding how the layered historical city, the transformative and trans-temporal character of cities, becomes heritage values which merits conservation and for being implemented in urban planning.
In urban planning, a policy to include the idea of 'commercial cities' (cities that proves incomes, jobs and profits) with 'smarter cities' (cities that are technological, digital and interactive) and 'greener cities' (cities that are environmentally friendly) has been a way of accommodating the strategies for a more economically, culturally and environmentally sustainable urban development. I am arguing that a key aspect for understanding the sustainability of cities, and for bridging the divide between abstract concepts of sustainability and concrete measurable living cities, is to examine the transformative nature of cities over time, its complex processes and driving forces, and how urban heritage as a product of changing cities are values being activated as a resource in present urban development. Therefore, as equivalent to concepts of 'smart cities' and 'green cities', the idea of 'deep cities' will be a suitable instrument for unpacking the dynamics of what makes a place to be a 'good' place for people when assuming the role heritage plays in socially inclusive and sustainable placemaking.
The presentation will first focus on the role of urban heritage for social sustainable urban futures which introduces some of the key findings in the CURBATHERI – Deep Cities project. What makes a 'livable city' that support factors such as identity, belonging, quality of life and health for all citizens in blends of historically and renewed urban environments? What is the role of urban heritage in socially inclusive and sustainable placemaking? Thereafter the presentation will focus on the distinct character of urban archaeological heritage when enabled as a conceptual tool in urban placemaking. Theoretical concepts such as 'dissolution' and 'decay', 'collage', 'palimpsest' and 'stratigraphy' are discussed as planning concepts that, each in their own way, define approaches towards implementing the traces of the past in various cityscapes.

Considering longterm effects of the level of ambition in contract archaeology – valuing historic knowledge for future generations.
Andrine Nielsen, Jeanette Gustavsson, Jonathan Pye & Caj Carlstein, Rio Kultur- och Naturkooperativ, Göteborg.
Large infrastructure projects in Gothenburg during the last decade have given opportunities to excavate entire districts of the city, both central parts and historical suburbs. Most notably: Nya Lödöse 2012-2017, Västlänken 2018- ongoing and Masthugget 2020- ongoing.
Rio Göteborg is undertaking the largest excavation of a harbour and sailor town district in Sweden. Masthugget was established just outside the walled city of Gothenburg as a port in the end of the 17th century and consisted mainly of private harbours serving the international trade of iron and timber. The archaeological results, so far, of 18th century Masthugget, have given us new perspectives on this area contrary to stereotypical ideas of suburbs and harbours in earlier research. Interdisciplinary methods of archaeological data, dendrochronological analysis, archival sources and maps have given a more nuanced image of the area, its population and social development.
The project is carried out from levels of ambition set by the County Administrative Board. The levels are means to streamline and determine the archaeological approach– but what immediate consequences are there for how we

excavate, the results that we can achieve, effects on the public outreach and the possibility of using the data for further research on the projects conclusion? And what are the long-term consequences? In twenty years how will the level of documentation for this period be perceived?
Challenges to the project are collaborations with several entrepreneurs with different schedules, economic plans, and priorities that complicates the coordination and allocation of our staff and other resources. All year-round excavation and unforeseen events present further obstacles to the project, especially creating time for documentation, registration and report writing. Historically, Masthugget has undergone continuous redevelopment, affected by fires, prosperous periods of trade as well as abrupt decline, the emerging of small industries and a new regulated city plan in the late 19th century. The excavation project is part of a large redevelopment of the district Masthugget, in line with plans for the entire city of Gothenburg. While we are excavating remains from the 18th and 19th centuries - buildings from the same period are being demolished or are under threat of destruction in an increasingly gentrified environment leaving us with questions about rescue archaeology while losing the existing historic town.

In search for guidelines for preserving and conservating town archaeological finds and samples
Tanja Ratilainen, Museum Centre of Turku and University of Turku.
Until 2015 Museum Centre of Turku executed most of the town archaeological rescue excavations in Turku, Finland. Over the years certain general practices developed regarding preservation and conservation of archaeological finds and scientific samples. Today private archaeological companies execute the rescue excavations according to very general guidelines by the National Heritage Agency. The finds are still delivered to the archaeological collections of the museum, but the guidelines hardly give any advice on the practices what to preserve and what not, not to mention how they should be conservated.
In this new environment more precise guidelines for preserving and conservating finds is required. This need in Turku is emphasized by the possibility of building a tram line through the medieval city center, which means thousands of cubic meters of cultural layers to be excavated and a huge amount of artefacts found. The preservation of organic materials is good in the medieval layers, which brings us also to the problem of conservation of finds. Should we preserve all the medieval finds? No matter the context, no matter the condition? What to do with finds made of iron, which constitute a large part of finds in the post medieval layers and cause large conservation expenses? Should we preserve every piece of a wooden vessel per se? of leather waste? of waste from cutting wood? or only whole objects? As the resources for conservating are limited, should certain finds be prioritized, and certain finds simply thrown a way (after their documentation)? On what grounds? And what is the level of their documentation? in addition, if all the scientific samples are analysed or thrown away during the post excavation work, is there anything to be analysed for the future researchers? Should we even think about them? Or do we trust that there will be more excavations producing new samples?
Since spring of 2022 a group of archaeologists representing researchers of the university, field archaeologist from the private companies and heritage management sector as well as conservators have got together and worked on these difficult aspects of what to preserve and what not. The aim of the group is to produce guidelines that all the parties could accept and work with. On behalf of the group, I would like to present our ideas and hopefully some of the outcomings and solutions, remaining problems and perhaps get some new ideas from the Nordic colleagues dealing with urban archaeology. The guidelines should to serve in preserving our archeological heritage for the future society.

Ny arkeologi i Gamla stan i Kalmar
Hanna Menander & Magnus Stibeus, Arkeologerna
Kalmar var en av medeltida Sveriges mest betydande städer. I den äldre delen av staden har sedan 1920-talet runt 300 arkeologiska undersökningar gjorts. Därtill finns ett mycket rikt skriftligt källmaterial bland annat i form av en medeltida tänkebok. Den innehåller uppgifter om köp och försäljning av gårdar, tomter, hus, bodar och kålgårdar. Dessutom omnämns ett par tusen personer som fått burskap i staden. Tänkebokens rika material bearbetades av Dagmar Selling på 1980-talet vilket mynnade ut i en karta över hur hela den medeltida staden såg ut planmässigt på 1400-talet med kvarter och tomter och ofta namn på de som bott där. Sellings arbete har dessvärre kommit att bli ett styrdokument för mycket av arkeologin i Gamla stan trots att det bör ses som en storskalig projektion. Till yttermera visso så finns informationen där, namngivna personer med yrken och var de bodde, en unik möjlighet för arkeologin. När vattenledningarna i Gamla stan nu byts ut finns nya möjligheter att arbeta vidare med uppgifterna i tänkeboken men också med de äldre undersökningarna. De nu aktuella undersökningarna innebär ett tvärsnitt genom staden där vi i nuläget har undersökt drygt 3000 kvadratmeter men bland annat ett 10-tal stenhus, gator, brunnar, latriner men också

otvetydiga spår efter Kalmarkriget. Föredraget kommer att presentera undersökningarna så här långt och vidare problematisera hur vi metodiskt går till väga.

Mellan stad och förstad: framväxten av ett historiskt landskap i slussens skugga

Jan Kockum, Arkeologikonsult.

Stockholms sluss har i fyra skepnader existerat i nästan 400 år; varje version var ett resultat av ändrade topografiska, socioekonomiska och politiska förutsättningar. Den senaste ombyggnationen gjordes på 1930-talet. Då gjordes enbart begränsade arkeologiska insatser där man främst koncentrerade på monumentalarkeologi, bland annat dokumenterades delar av stadens försvarsanläggningar från medeltid och renässans.

Nu byggs den femte generationens sluss, som ska svara mot både dagens och framtidens behov och krav. Detta innebär stora ingrepp både på land och i vatten över ett område som täcker in cirka 80 000 kvadratmeter i Stockholms historiska stadsområde. Länsstyrelsen i Stockholm, som ansvarar för kulturmiljövården, har efter upphandling utsett Arkeologikonsult att utföra de arkeologiska undersökningar som behövs i samband med byggnationen.

Eftersom den arkeologiska insatsen på 1930-talet var begränsad har det utifrån den dokumentationen varit svårt att i förväg bedöma omfattningen av de urschaktningar i undersökningsområdet som gjordes i samband med den tidens slussbyggnation.

Inför den aktuella undersökningen ställdes vi inför ett antal utmaningar: arbetet skulle utföras parallellt med byggnationsarbetet under lång tid - arbetet påbörjades till viss del redan 2013 men i huvudsak år 2016 och avslutades under hösten 2022. Urschaktningsgraden, och därmed bevarandegraden, var osäker och det fanns heller ingen möjlighet att göra förundersökningar. Att undersökningen behövde genomföras både på land och i vatten innebar ett stort spann på de antikvarisk-topografiska förutsättningarna. Slutligen förväntades undersökningarna generera ett mycket omfattande dokumentationsmaterial och en stor mängd fynd utspridda på en stor mängd delundersökningar åtskilda av sedan tidigare urschaktade områden. Hur skulle detta kunna sammanfogas till en helhet?

Den övergripande lösningen har varit ett nära samarbete med flera aktörer. Sedan Arkeologikonsult fick uppdraget så har vi, med stöd av Länsstyrelsen, haft täta kontakter med exploatören Stockholms stad och byggföretagen och därmed har vi haft möjlighet att integrera det arkeologiska arbetet i byggprocessen.

Med ett omfattande arkiv- och utredningsarbete så har vi till viss del kunnat kompensera för bristen på förundersökningar. Undersökningsområdet har efter bevarandegrad och antikvarisk-topografisk situation kunnat delas in i ytor som schaktningsövervakats och ytor som undersökts genom särskild undersökning. De ytor som har krävt maritimarkeologiska insatser har undersökts i samarbete med Statens maritimarkeologiska muséer, och i gränslandet mellan land och vatten – i landutfyllda områden – så har muddringsarbete under arkeologisk övervakning utförts.

Det arkeologiska arbetet har genererat ett omfattande dokumentationsmaterial som läggs in i databaser och som analyseras med GIS. Bearbetningen av fyndmaterialet och analysarbetet görs i nära samarbete med experter, både på nationell och internationell nivå.

Undersökningen har inneburit ett unikt tillfälle att undersöka ett topografiskt tydligt avgränsat rum och dess människor under perioden cirka 1000–1850 i ett område mellan en stad och en förstad. En stad som började som lås för Mälaren, men som med sin sluss kunde utvecklas till en kommunikationsnod med betydelse för landets ekonomiska utveckling och under lång tid utgöra ett av naven i den svenska ekonomin.

Byer i det sydsjællandske Øresundsområde – småt men godt.

Annemette Kjærgaard, Museum Sydøstdanmark

Indlægget vil være en status på læring og erfaringer med de seneste ti års undersøgelser i købstæderne i Museum Sydøstdanmarks område.

Grundet vores baggrund i middelalderarkæologien har der været en tendens som udgangspunkt i at måle og vurdere udgravningsresultaterne i forhold til de fundrige, datatunge materialer fra tidlige byer som Ribe, Roskilde, Lund osv. Denne sammenligning har vist sig uhensigtsmæssig af flere årsager. Dels var baggrunden for etableringen af byerne en helt anden i næsten alle forhold, ligesom rammerne for udvikling over tid og sted anderledes. I stedet har det vist sig givtigt at lade undersøgelserne tale i egen ret og især nødvendigt at forsøge at indplacere dem i en meget større kontekst end den enkelte gravning eller enkelte by. Dette vil blive belyst ved konkrete eksempler.

Forskellige interdisciplinære samarbejder med diverse naturvidenskabelige fag har været en vigtig del af undersøgelserne, og vil fortsat være det. Men vi er også nået til den erkendelse, at det fremover vil være nødvendigt med en langt større og mere formaliseret inddragelse af kvalificerede specialister til fremdragelse og undersøgelse af relevante skriftlige kilder, og problemerne forbundet hermed vil blive belyst og diskuteret.

Before the towns: Traces of the pre-urban landscape

Halldis Hobæk & Julian Cadamarteri, Norwegian Institute for Cultural Heritage Research (NIKU).

Norway's medieval towns did not emerge in a vacuum; they were established in landscapes with significant time depth which were integrated in the social and political networks of the Iron Age. Mapping the fragmented traces of the iron age remains underneath the cultural layers gives new insight into the phases before the urban settlements developed. Investigating the structures and networks that were in place before the establishment can add new insights not only to the political dimensions of the earliest phases of the medieval towns, but also the physical layout and restrictions on the built-up area.

By gathering and combining information from older descriptions and investigations, object collections and various archaeological sources the places where the medieval towns of Trondheim and Bergen came into being have been investigated. Mapping and characterizing the nature of land use and settlement practices in the landscape throughout the Iron Age and the early medieval period has allowed an exploration of the relationship between the content and organization of the social landscapes in order to add an important long-term perspective to our understanding of the nature of the transition from a 'pre-urban' to an 'urban' way of life.

Focusing on two of Norway's medieval towns it has been possible to bridge the traditional divide between research on Iron Age emporia/central places and medieval towns, as well as producing new knowledge about the selected cases. Raising important questions such as; What were these places before the towns, and which activities took place here? What networks and practices can we discern, and what was their significance (social, political, cultural, religious, economic etc.)?

End of Session 4

Confirmed Posters

Archaeology for Västlänken in Gothenburg

Carina Bramstång Plura et al. Arkeologerna, Statens historiska museer

Those of you interested in archaeology may have heard about the archaeological discoveries in Gothenburg in recent years. A medieval defensive tower, sundials of stone and testicle daggers have appeared in news media, and above all boat wrecks. These are some of the discoveries made when archaeologists investigated historical remains of national interest in Gothenburg.

A big infrastructure project are underway, 'The west link' (Västlänken), a new rail tunnel with stations under the city. Construction began in 2018, and archaeological excavations will continue until 2024. So far, we have explored, amongst other things, a medieval fortification, boat wrecks, the gardens of an agricultural property and a historical city.

Today, Skansen Lejonet (The Lion Fort) stands on the top of Gullberg, but already by the 1300s there was a fortified house on this rocky mount. Now the remains of fortification towers, houses, ramparts, walls, moats and contemporary artefacts have been examined and they tell us of both wars and everyday chores on the medieval stronghold Gullberg.

Furthermore, the Johanneberg Estate gardens at Korsvägen have been excavated. Farmland estates were created to supply food to Gothenburg's inner city. They had fields, meadows, and pastures. Fruit and vegetables were grown in their kitchen gardens. The diverse history of the farmland estates reflects almost 300 years of human endeavour, trade and burgeoning industrialisation, leading to broad global networks.

Gothenburg was built in the 1620s and inside Gothenburg's city moat we find the city fortifications and traces of the first residents – buildings, streets, and related artefacts. In the old mast harbour several boat wrecks have been excavated and we will be able to look at topics such as shipping history, customs and much more. New knowledge deepens and gives life to the history of River Göta älv's estuary.

Towards to growing interest about urban archaeology of early modern towns in Finland: past, present, and new possibilities

Tia Niemelä, University of Helsinki

Finnish archaeology has always had interest in the historical period. Although, in past research, focus has been more towards Medieval times, some recent large-scale Early modern excavations have been taking place in Finland. Most archaeological excavations in Finland are carried out due to construction projects and thus, those are usually rescue

excavations. This poster is based on an upcoming article which presents the development of urban archaeology of early modern towns in Finland. The article will be a brief literature review about this topic. It will discuss what special features there are when archaeologically researching Early modern towns and how the written sources could be used within the process. A case study that will be discussed is a town of Turku, which was founded in the Medieval times. Having been the most important town in Medieval Finland, Turku, has also great potential for researching Early modern period town life.
Some questions that are discussed are how have research interests changed in past years and what possible reasons there are behind it? How modern technology and growing interest to utilize it in archaeology has changed the discipline? Why urban archaeology of the Early modern times is different compared to Medieval urban archaeology in Finland?

Archaeology on the shoreline-new evidenceof coastal activities from the high medieval period to the 1880's in the town of Varberg on the Swedish West Coast

Elisabet Schager, Arkeologerna, National Historical Museums & Johan Klange, Halland Museum of Cultural History, Department of Cultural Heritage.

Between 2019 and 2022 archaeological excavation was conducted as part of a big infrastructure project called Varbergstunneln (The Varberg tunnel). The construction site affects an area that used to be Varberg's coastal zone before the railway and the harbor expansion. Although only a few patches of the 700 meters long area contained archaeological remains, these were in turn quite spectacular in nature. In the south, production waste from the 18th-century clay pipe factory was discovered which is the second known find of such remains in Sweden, providing evidence of a production that previously was only known from written records. Further north ,remains of maritime activities were discovered dated both to the Early Modern town of Varberg when a wooden jetty was used by smaller vessels to unload goods from ships anchored in Varberg bay as well as to the older Medieval town of Varberg (Getakärr) that instead utilized a small quite shallow bay as its harbor basin. In that harbor basinfive shipwrecks were found as well as evidence of coastal fishing. Two of the shipwrecks are 14th century Cogs which highlights the importance of Varberg as a Medieval port in the Hanseatic system. One of them was fully rigged when it rolled on to its port side. A 15thcentury shipwreck was also found further north of the excavation area. At presen,t the material from the excavations is being processed and we are about to get an extensive understanding of the coastal activities of the different towns of Varberg as well as their trading networks.

Det yngste Starup og det ældste Haderslev

Tenna Kristensen, Museum Sønderjylland

Tæt på Møllestrømmen lykkedes det i 90'erne at finde det ældste Haderslev. Udgravningsresultaterne har resulteret i et bud på byens udvikling fra dens grundlæggelse i midten af 1100-tallet og op igennem middelalderen, til den driftige handelsby med omfattende handelsforbindelser til Ribe og Østersøområdet, som den bliver i senmiddelalderen. Der er spor efter håndværkere og handel fra 1100-tallet, parcellering og stavbyggede huse i området fra 1200-tallet, og fra en opdæmning af Møllestrømmen i midten af 1200-tallet stammer bl.a. fodtømmer og kraftige stolper fra en vandmølle. Haderslevskibet fundet i 1954 og skibstømmer fundet i udgravningen tyder på, at Haderslev kan have været bygge- og hjemsted for tidlige kogger omkring år 1200. Også tømmer fra Kollerupkoggens synes, at stammer herfra. De mange dendrodateringer har også muliggjort en datering af det velbevarede genstandsmateriale. Kammageren, skomageren og smeden er rigt repræsenteret, og der er et lille indslag af importerede genstande.
Et interessant aspekt omkring den tidlige bydannelse i Haderslev er også den bosættelse, som opstår allerede i 1000-tallet få km. øst for Haderslev langs fjorden ved Starup. De to bebyggelser eksisterer i en periode samtidig og der er både ligheder og forskelle i de to bebyggelser. Flere årtiers udgravninger har muliggjort betragtninger over de to lokaliteters forhold til hinanden og et forsøg på at opstille en forklaringsmodel, hvorfor Haderslev bliver til en egentlig by og hvorfor Starup mister sin betydning.
Undersøgelserne ved Haderslev og Starup er et interessant eksempel på, hvor langt man kan nå ved at kombinere gamle udgravningsresultater med nye.

The Role of Urban Archaeology in a Multidisciplinary Approach to Urban Heritage

Philip H. W. B. Hansen & Martin Ebert, Norwegian University of Life Sciences & Rainer Atzbach, Aarhus University.

The 13th century of Mecklenburg was characterized by the evolving of an urban landscape. Following the conquests and conversions of Slavic feudal tribes in the 12th century, German speaking settlers were introduced to plant both villages and towns. While the development of these towns has been considered through historical and archaeological work

done by other authors, the aim of this contribution is to examine an interdisciplinary approach connecting historical science, urban morphological and urban archaeology. This approach aims to determine the major factors influencing the urban development of towns of Mecklenburg in the 13th century. For this study, the town of Friedland will be used as a case. Friedland has a rich catalogue of archaeological findings while at the same time the urban history is well established. Meanwhile major details of the earliest phase of urban in the mid 13th century settlement remain still unclear.
One of the central research questions to of this work on the early urban development in Mecklenburg is to what level they have to be considered as "planned". Two phrases central to this discussion are whether the towns "grew organically" or were "planned/planted", typically seen an issue between territories that were inside and outside of the Roman territories. The traditional approach following Conzen and others is to use the oldest cadastral maps of the town, where the shape would be divided into morphological regions.
However, more recent research has shown the problems with this methodological approach. Therefore, this project seeks to combine methods from archaeological research with those used within urban morphological research. The research will start by examining Friedland through the cadastral maps, working as both a basis for standardizing the analysis and the results, where the urban tissue (streets, blocks, and plots) will be divided into more manageable sizes. These will then be used as a basis for adding information gathered as a result of archaeological excavations, information from historical sources such as town privileges and legal disputes within the towns. The use of GIS-supported mapping will provide a basis for morphological comparison between Friedland and other towns that will be studied throughout this PhD. All of the results and analysis would be placed into a matrix to ease these comparisons.
Previous urban archaeological research, like Projekt Middelalderbyen and Deutscher Historischer Städteatlas have shown how interdisciplinarity and a systematic presentation of the results are able to place medieval towns within the larger context of Nordic and German town development. The goal of this PhD project is to display how a similar interdisciplinary approach can be used to place the development of towns like Friedland in the larger context of urbanization in the regions. As these towns were under both internal and external influences, the matrix would be a perfect basis for the future discussion of urban heritage within Mecklenburg.

The maritime life of a Viking Age town

Rune Edberg, Arkeografiskt Centrum, Uppsala

Because of the post-glacial land uplift, Sigtuna's shoreline is now c.4 m lower than 1000 years ago. The reclaimed area has been progressively built on, creating conditions for 'subterranean maritime archaeology'.
Rescue excavations carried out in in the town's 10th to 13th-century occupation layers during recent years have yielded many hundreds of kilos of iron scrap. Clench bolts, nails and roves, mostly broken, damaged, twisted and heavily corroded, are numerous.
More than a thousand clench bolts have been studied. These items, with rivet and rove in their original position, indicate size of planking, and in its turn indicates vessel size. Strips of roves are trace artifacts for boat building in the clinker tradition as are a chiseling tools.
It is evident that Sigtuna's boats were of a moderate size which would be expected as they would have been be able to navigate rivers, narrow inlets and shallow waters. Their main job must have been to keep up a steady supply to the townspeople of life's daily necessities of food, firewood and other commodities.
Wood is generally very poorly preserved but some remains of boat planking, all from moderate-sized craft, have all the same been found. Fishing tackle of wood, pine bark and birch bark are proof of the town dwellers' lakeside fishing activities.
All told, archaeology shows how life in early Sigtuna was marked by close interaction with sea and lake communication and resources. Notably, he number of preserved clench-bolts is huge, and extra-ordinary testimony of large scale boat building, scrapping and repair in the clinker-building tradition.