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Sub/semi-Subterranean Complexes in Byzantine Beer Sheva, Negev, Israel, Date, Use and Typology

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Byzantine Beer Sheva presents a phenomenon of digging, lining, building, and making extensive use of sub/semi subterranean complexes. We note on the relationship between these sub/semi subterranean complex and the 'aboveground' structure and details such as the construction of the stairway, the delimitation of the earthen section formed, the installations exposed in the complexes and the form of roofing. The installations and ceramic assemblages point towards the fact that these complexes were more than simple storage facilities and were in daily use. The earliest Byzantine sub/semi subterranean complex dates to the second half of the fifth century and sixth century though the majority of sub/semi subterranean complexes, built on the outskirts of Byzantine Beer Sheva date slightly later in the sixth century and seem to have been excavated following the outbreak of the Bubonic plague which swept through the Negev in the mid sixth century CE.

Introduction

Loess started to deposit in the Beer-Sheva basin at the northern perimeter of the Negev Desert towards the end of the Pleistocene era continuing into the Holocene era. The loess which currently reaches several meters in thickness is characterized by limestone deposits. It is difficult to dig into, but once a cavity is created, the earthen loess walls remain compact and do not crumble or collapse. The loess slows percolation of rainwater, helps maintain a steady temperature and moisture level within the excavated cavity and reduces the risk of pests. Subterranean spaces offer protection from the elements including dust storms which occur often in the early spring, summer and autumn.[1] In addition, the Subterranean complexes offer an activity/storage area that is hidden from the eye and from potential hostile forces. It is perhaps these advantages, amongst others, that encouraged man to dig into and make the loess a comfortable storage, activity and likely, a living space.

The first to create and use anthropogenic cavities in the loess of the Beer-Sheva basin date to the Chalcolithic culture. In the Chalcolithic period excavated

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1. A. Kushelevsky, G. Shani, and A. Haccoun, "Effect of Meteorologic Conditions on Total Suspended Particulate (TSP) Levels and Elemental Concentration of Aerosols in a Semi-Arid Zone (Beer-Sheva, Israel)," *Tellus B: Chemical and Physical Meteorology* 35, no. 1 (1983): 55-64.

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cavities took on several shapes including rounded depressions, and cylinder and bell shaped deep shafts - some of which are connected by tunnels. These may have served for dwelling, storage, defence, and/or burial.[2] Few examples from the Beer-Sheva area suggest that some use was made of sub/semi-subterranean depressions and rooms during the Late Persian,[3] Hellenistic,[4] and Roman periods.[5] It is only in the Byzantine period that the phenomena reemerged with magnitude.

The sub/semi-subterranean complexes discussed below are not dissimilar in concept to the natural and enhanced cavities and caves of the southern Hebron hills and Judean lowlands which were in extensive use throughout the Byzantine – Mamluk periods (and in some cases sporadically through present day). These caves, cut into the hard limestone hillside included built entrances, a division into areas and were often surrounded by a walled courtyard and were an integral part of a larger complex. The main difference between the natural or hewn caves and the sub/semi-subterranean complexes dug into the loess is on the one hand technical and on the other hand, and perhaps directly related to the first, the relatively limited period within the Byzantine period that sub/semi-subterranean complexes were in use. The short period that sub/semi-subterranean complexes were in use may also reflect the state of economy and security in the region at the time.

Beer-Sheva is situated in the northern Negev, in a semi-arid desert. In the Byzantine period Beer Sheva was an important administrative, religious and military center. It is mentioned in a number of historical texts and epigraphic sources. The two main historical sources are the *Notitia Dignitatum*, a Roman imperial document dated to the beginning of the fourth century CE, corresponding to reign of Emperor Diocletian (284-305 CE) and the "Beer Sheva Edicts". The *Notitia Dignitatum* states that a cavalry unit from the province of Dalmatia was stationed in Beer-Sheva (*Equites Dalmatae Illirian*). The Edicts lists the three provinces of Palestine (Prima, Secunda and Tertia) and the sums of money that residents had to pay the army, emphasizing the centrality of Beer Sheva in the Byzantine military system.

Recent archeological excavations and research revealed archeological remains which enable us to better reconstruct Byzantine Beer-Sheva. Byzantine Beer-Sheva is constructed on loess soil plains and low limestone hills. The Byzantine

2. Y. Abadi-Reiss, "Dug in Loess – New Perspectives for Understanding Underground Spaces in the Chalcolithic Period of the Northern Negev," in *Archaeological Excavations and Research Studies in Southern Israel* (eds.) A. Golani, D. Varga, G. Lehmann, and Y. Tchekhanovets (Collected Papers, 17th Annual Southern Conference. Volume 4, 2021), 133-152.

3. Sapir personal observation.

4. Y. Baumgarten, "Be'er Sheva', Railway Line," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 132 (2020).

5. Varga personal observation.

city included a cathedral,[6] churches, monasteries, bath houses, and a military camp.[7] Surrounding the municipal center were wealthy residential quarters. Diverse industrial installations and agricultural complexes[8] were constructed along the outskirts of the city. The Byzantine city is surrounded by cemeteries of stone lined cist tombs.[9] The farmsteads and agricultural installations are usually found beyond the cemeteries delineating the Byzantine city (Figure 1). The city flourished through the seventh century though there is evidence that by the Umayyad period some of the Byzantine structures stood abandoned.[10] In the Abbasid period new farmsteads were constructed around Beer-Sheva. These integrated architectural elements dismantled from Byzantine structures, likely from Byzantine Beer-Sheva.[11]

A number sub/semi-subterranean complexes exposed hint a wide phenomenon. From a dozen examples we may conclude that these complexes were usually excavated into the loess soil though there are a few examples of quarrying into the limestone bed rock, following the same techniques and forms. How the sub/semi-subterranean complexes correspond and were integrated within the 'traditional' stone built Byzantine city is not entirely clear. This is mostly due to the poor state of conservation. Most sub/semi-subterranean complexes are part of the agricultural farmsteads surrounding the city. Stairs lead down from within the courtyard though at a number of sites no remains of the "aboveground" structure were found. Few of the exposed complexes are situated closer to the Byzantine administrative center.[12]

6. P. Fabian, P., and Y. Ustinova, A Monumental Church in Beersheba: Architecture, Mosaics and Inscriptions," *Israel Exploration Journal* 70, no. 2(2020): 221-245.

7. Y. Gil'ad, and P. Fabian, "7,000 Years of Settlement: The Archaeological Remains in Be'er Sheva' from the Sixth Millennium BCE until the End of the First Millennium CE," in *Be'er Sheva' an Evolving Metropolis: Selected Articles* (eds.) Y. Gradus and E. Meir-Glitzenstein, 303-331 (Be'er Sheva, 2008).

8. D. Varga, and S. Talis, "Byzantine Archaeological Remains in Beer Sheva, Israel," *Athens Journal of History* 7, no. 3 (2021): 203-216.

9. Abadi-Reiss, and D. Eisenberg-Degen. "Be'er Sheva', Balfour Street," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 125 (2013).

10. Varga and Talis, "Byzantine Archaeological Remains in Beer Sheva, Israel,"2021.

11. D. Eisenberg-Degen, "Nahal Be'er Sheva'," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 129 (2017).

12. Y. Israely, "Be'er Sheva'," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 17 (1966): 3-4; A. Fantalkin, "A Salvage Excavation at a 6th-7th Century C.E. Site on Palmach Street, Beersheba," *Tel Aviv* 27, no. 2 (2000): 257-272.

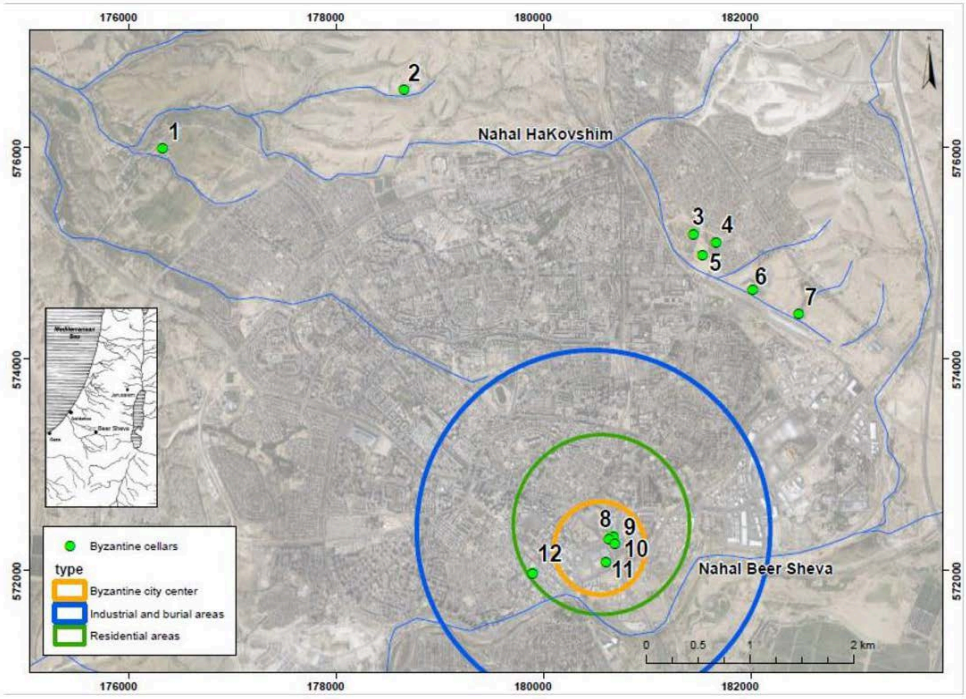

Figure 1. *Distribution of Sub/Semi Subterranean Complexes in and Around Byzantine Beer Sheva*
Source: prepared by Emil Aladjem, IAA.

Structural Characteristics of Sub/Semi-Subterranean Complexes

The existence of sub/semi-subterranean complexes in Byzantine Beer-Sheva was first noted in the 1960's. These were mostly encountered during monitoring the excavation of deep trenches made for laying sewage pipes, foundation pits and other construction related work. The first and most complete sub/semi subterranean complex was excavated in 2011[13] after which several more sub/semi subterranean complexes were recognized and excavated in and around Byzantine Beer-Sheva[14] (Figure 1). Examining a dozen complexes it is evident that each is slightly different, they may be relatively simple consisting of single space to a network of interconnected rooms. Few complexes present a clear connection to an

13. Varga and V. Nikolsky, "Be'er Sheva'(Central Bus Station)," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 125 (2013).

14. Eisenberg-Degen, "The Phenomeon of Underground Cellars During the Sixth Century CE in the Be'er Sheva Valley – Excavations in the 'Northern Campus' Site as a Test Case," in *Archaeological Excavations and Research Studies in Southern Israel* (eds.) A. Golani, D. Varga, G. Lehmann, and Y. Tchekhanovets (Collected Papers, 17th Annual Southern Conference. Volume 4, 2021), 153-171.

"aboveground" structure. This is largely due to the poor preservation of the ancient remains.

The Byzantine sub/semi-subterranean forms, constructional styles, and elements such as the entrance into the complex, the treatment of the earthen walls and the form of roofing, help us better understand and define them. At present a dozen sub/semi-subterranean complexes recognized in archaeological excavations have been published. In some cases the complex was only partially excavated, or in a bad state of preservation, in other instances the excavation report does not relate to details that in retrospect seem to be of importance. Following we list some of the most pronounced characteristics noted in relation to the Beer-Sheva Byzantine sub/semi-subterranean complexes. Piecing this data together we are able to better understand the Byzantine sub/semi subterranean phenomena.

"Aboveground" structure – roughly half of the subterranean complexes clearly related to an 'aboveground' structure. In several cases the "aboveground" structure was removed or destroyed as the modern city of Beer Sheva developed, and prior to the identification of the sub/semi-subterranean complex, which at times occurred only a decade later. In these cases, it is clear that an "aboveground" structure existed, though the exact relationship between the two is missing. The "aboveground" structure could take on several forms, such as a relatively simple single roomed structure and yard[15] a farmstead[16] or a large villa[17].

Stairway construction – in all but one documented case the descent into the sub/semi-subterranean complex was by way of a built stone staircase. The staircase built either of dressed stone or unworked field stones is set between two descending stone walls which delimited the earth section. A few examples present a staircase which, after a number of stairs, turned creating an angle, other staircases were straight leading from the upper surface level to the sub/semi-subterranean one. A single example presents access by a sloped earthen and mudbrick ramp, set between two stone walls[18] (Figure 2).

15. Eisenberg-Degen and A. Levi-Hevroni, "Be'er Sheva', Naḥal Kovshim and Naḥal 'Ashan," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 132 (2020).

16. Eisenberg-Degen, "Be'er Sheva', Ben-Gurion University," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 130 (2018).

17. S. Talis, "Be'er Sheva'," *Hadashot Arkheologiyot - Excavations and Surveys in Israel* 127 (2015).

18. Eisenberg-Degen, D. "Be'er Sheva', Nahal 'Ashan (Newe Menahem B): Remains from the Byzantine and the Ottoman *Periods." Hadashot Arkheologiyot - Excavations and Surveys in Israel* 130 (2018).

Figure 2. *Semi Subterranean Complex Neve Menachem*
Source: photo by Davida Eisenberg-Degen, IAA.

Stairway placement – the stairway is set external to the "aboveground" structure, leading from a (usually walled) courtyard down to the sub/semi-subterranean complex. It seems that the sub/semi-subterranean excavators intentionally avoided digging below the "aboveground" structure so as not to increase the chance of collapse.

Number, shape and size of rooms – the sub/semi-subterranean complex may be composed of a single space with small enclaves for installations to a complex system consisting of a courtyard or a foyer which connected to a series of additional rooms (Figure 3). It seems that most courtyards/foyers led to three additional rooms though other floorplans exist. The courtyard, foyer and rooms tend to be of a rounded or elliptical shape. When the room is of a more rectangular shape, the "corners" tend to remain rounded. Exceptions are seen when the sub/semi-subterranean complex is hewn into bedrock rather than dug into loess, and then the rooms may be rectangular.[19] The fact that sub/semi-subterranean plans present these differences, suggests that specific premeditated adaptations were made to the plan according to the geological setting; loess versus limestone bedrock, rounded rooms verse rectangular ones. The size of subterranean rooms does not exceed three meters to prevent the earthen ceiling from collapsing. Large spaces were open to the sky or were roofed with perishable materials.

19. Fantalkin, "A Salvage Excavation at a 6th-7th Century C.E. Site on Palmach Street, Beersheba," 2000; Varga and Nikolsky, "Be'er Sheva'(Central Bus Station)," 2013.

Figure 3. *Subterranean Complex, Northern Campus*
Source: photo by Emil Aladjem, IAA.

Treatment of the earth sections and the construction of walls – with excavating and creating a sub/semi-subterranean cavity an earthen section is formed. The earthen section was treated in several forms; it could be covered with a simple layer of mud-plaster or with a layer of ceramic sherds, small fieldstones, or plaster. In some cases, walls of dressed stone or unworked field stones delimited the earthen section. Stone walls were also constructed within the sub/ semi-subterranean complexes, usually to separate rooms and form entrance ways. These had an additional role in supporting the ceiling.

Floor levels, thresholds and doorways – the sub/semi-subterranean complexes are not level but rather have between a step to five stairs leading between rooms. Semi-subterranean courtyards are of a higher elevation than the rooms around them (Figure 4). When the subterranean complex has a foyer, it may be lower than the other rooms. Floors consisted of beaten earth and in a single case an inner courtyard was paved. The entrance into sub/semi-subterranean complexes and the movement between rooms was through well-built entrances (Figure 5). The upper part of the entrance may have a straight lintel or may be arched, these are 1.6-1.8 meters in height.

Figure 4. *Semi Subterranean Complexes, Central Bus Station*
Source: photo by Skyview commissioned by the IAA.

Figure 5. *Entrance into Subterranean Room, Central Bus Station*
Source: photo by Asaf Peretz, IAA.

Installations – a wide range of installations have been documented in sub/ semi-subterranean complexes (Figure 6). These include tabuns, silos, stone basins and mortars, grinding stones, oil presses and stone platforms which seem to have served as bases for other installations such as "Pompeiian" grinding stones.

Figure 6. *Cooking Installations, Northern Campus*
Source: photo by Davida Eisenberg-Degen, IAA.

Roofing and air shafts – All of the excavated sub/semi-subterranean complexes were found filled with loess soil. The soil may have originated from the ceiling and roof of the complex, though may also have come from adjacent areas which collapsed into the cavity. Some fill layers include ceramic and glass sherds, ash layers and other finds which seem to have originated from the upper, on ground-level activity area. Built entrances and stone walls reinforce the notion that the ceilings consisted of natural earthen layers and that the rooms were excavated from the side, leaving a thick earth layer as a celling. As several subterranean complexes included cooking installations, we suggest the existence of air shafts, to help ventilate the underground rooms and serve as chimneys for the "kitchen" area (Figure 7). Air shafts were noted at a single excavation.[20]

20. Varga, personal observation.

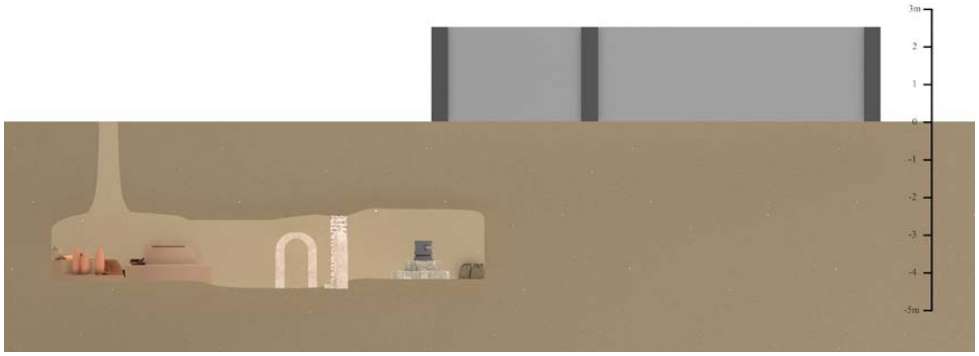

Figure 7. *Reconstruction of the Northern Campus Subterranean Complex, Section with Cooking Installations Air Shaft, Built Entrance and Room with Agricultural Installation*
Source: model by Sahaf Shaked.

Courtyards and perhaps some of the other spaces were either left unroofed or were roofed with perishable materials.

Based on the characteristics listed above, we propose three types of sub/semi-subterranean complexes:

A. A sub/semi-subterranean complex in which a staircase connects between a courtyard on the topsoil level to the semi-subterranean courtyard which was roofed with perishable materials. The semi-subterranean central courtyard housed an agricultural related installation for manufacturing or storage. Descending stairs led from this central semi-subterranean courtyard to additional, separate, subterranean rooms (Figure 4).
B. A subterranean complex, in which a staircase leads from a courtyard on the topsoil level to a foyer. The foyer leads to a number of additional rooms which are either on the same floor level or are slightly higher. Most rooms housed installations (Figures 3 and 6).
C. A semi-subterranean complex, in which the entrance could be by way of stairway or ramp, which led to a large space with small side enclaves (Figure 2). The central room and enclaves served to house installations. The space would be either open to the sky or roofed with perishable materials.

At present the three types do not seem to be chronologically defined and likely coexisted.

Use of Beer-Sheva's Byzantine Sub/Semi-Subterranean Complexes, and Their Desertion

There are several considerations that may bring to underground dwelling. Thick earthen walls and ceiling help maintain relatively constant and mild conditions. The depth of the underground complex reduces the presence of pests. These advantages may have been intentional and related to the use and purpose of the subterranean complex such as a storage area for grain and fermented foods. Other reasons for subterranean complexes may be related to extreme climate conditions and frequent sandstorms, lack of building materials or limited funds, the need to leave land for cultivation, or due to security reasons. It is tempting to recognize the sub/semi-subterranean complexes as cellars.[21] In some aspects they did serve as cellars; the optimal conditions of subterranean complexes made them ideal for long term storage. But the existence of agricultural production installations indicates that the complexes were multi-functional spaces.

Ethnographic parallels indicate that sub/semi-subterranean complexes may replace above ground dwelling and then will include all aspects of a house with sleeping courters, cooking installations, and storage.[22] In other cases, sub/semi-subterranean complexes found directly below structures or set at some distance serve as root cellars,[23] "summer kitchens" or "bake houses". These may be used on a regular basis or will be in use only when needed such as according to the number of people to feed, the number of ovens within the central kitchen, the preparation of specific foods (with strong or unpleasant smells), or to maintain stature and the separation of classes.[24]

The ceramic assemblages from the Beer-Sheva's Byzantine sub/semi-subterranean complexes include oil lamps, tableware, cooking vessels, and storage jars. The storage jars are almost all, of the bag shaped type. Caches of juglets were found in two subterranean complexes, both from sites situated closer to the Byzantine city center.[25] From these finds, the industrial installations and cooking installations, it is evident that the complexes were in daily (and at times nightly) use and were not solely storage facilities.

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21. G. S. Golany, *Earth-Sheltered Habitat History, Architecture and Urban Design* (New York, 1983).

22. Ibid; Golany, *Earth-Sheltered Dwellings in Tunisia Ancient Lessons for Modern Design* (New Jersey, 1988); Golany, *Chinese Earth-Sheltered Dwellings – Indigenous Lessons for Modern Design* (Honolulu, 1992).

23. E. A. Chappell, "Acculturation in the Shenandoah Valley: Rhenish Houses of the Massanutten," *Settlement Proceedings of the American Philosophical Society* 124, no. 1 (1980): 55-89.

24. Ibid; A. Maguire and A. Gomme, "Who Needs Two Kitchens?: and Who Parleyed in the Winter Parlor?" *Architectural History* 38 (1995): 58-68.

25. Fantalkin, "A Salvage Excavation at a 6th-7th Century C.E. Site on Palmach Street, Beersheba," 2000; Varga and Nikolsky, "Be'er Sheva'(Central Bus Station)," 2013.

The ceramic assemblage from the "Central Bus Station" excavation situated close to the Byzantine administration center, includes vessel forms dated to the second half of the fifth and sixth century CE. A hundred and thirty coins recovered were minted over several years, the earliest dating to the Late Roman period. The latest coin in the assemblage dates to 527 CE, the beginning of Justinian's reign. It is unclear when the "Central Bus Station" complexes went out of use though the ceramic assemblage and lack of coins postdating the mid sixth century CE, point towards their complete abandonment by the Early Islamic period. The ceramic assemblages from the sub/semi-subterranean complexes excavated outside of Byzantine Beer-Sheva date to the sixth century. At present the ceramic finds from a single subterranean complex suggest that it was in use through the early 7th century CE. There is no evidence to support the use of sub/semi-subterranean complexes in the Abbasid period suggesting that the complexes were deserted by then. Sub/semi-subterranean complexes were in existence prior to the mid sixth century crisis, especially on the outskirts of the Byzantine administrative center. These went hand in hand with the founding of new farmsteads through the duration of the sixth century CE.

In several of the sub/semi-subterranean complexes thin layers of dried mud covered the earthen floors. These are the byproduct of flooding events. It seems that flooding was the primary reason that sub/semi-subterranean complexes went out of use. In a number of cases constructional adjustments were made to keep the complex in use and in running order. These included raising floor levels and adjusting the stairs. Nonetheless it seems that the main reason of the abandonment of the sub/semi-subterranean complexes is flooding and the eventual collapse of the earthen ceiling layer. It is difficult to reconstruct the thickness of the subterranean complexes' loess ceiling, especially after the topsoil went through several changes with the development of modern Beer-Sheva. We estimate the ceilings to be roughly two meters thick. Anthropological parallels point towards loess ceilings 3.5-15 meters thick. The stability of the ceiling increases with its thickness,[26] therefore a two-meter-thick ceiling would not have been very stable. The abandonment of the sub/semi-subterranean complex did not necessarily mean that the entire site was deserted and often the "aboveground" structure continued to function. Perhaps the best example comes from the "Gev Yam" excavation, after the sub/semi-subterranean complex went out of use the stairway leading to the subterranean complex was paved over and the farmstead continued to function.

26. Golany, *Earth-Sheltered Habitat History, Architecture and Urban Design*, 1983.

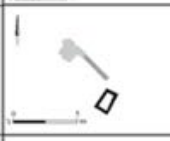
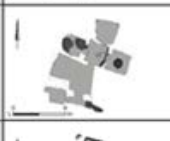
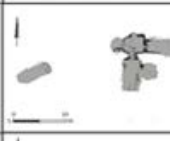
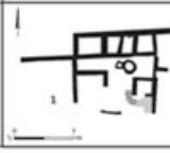
No. on map	Excavation name	Permit no.	Complex type	Relation to 'Aboveground' structure	Treatment of earth sections	Roofing/Ceiling	Installations	Reference	Plan
1	Nahal 'Ashan Area C	A-7026/2014	C	Segmented remains of farmstead	Mud-plaster	None or perishable	Pompeii grinding stone, installation related to oil production, tabun	Eisenberg-Degen 2018b	
2	Nahal Kovshim and Nahal 'Ashan Area L	A-8306/2018	B	Entrance from external courtyard of small farmstead	Mud-plaster	Loess	Stone basin	Eisenberg-Degen and Levi-Hevroni 2020	
3	Ben Gurion University, Area B	A-8090/2016	B	Farmstead (removed prior to excavation)	Mud-plaster, ceramic sherds, stone walls	Loess and perishable materials	Stone platform, tabuns,	Eisenberg-Degen 2018a	
4	Ben Gurion University, Area A Collapsed sub-terranean complex recognized, not excavated	A-7756/2016				Loess		Varga 2018	
5	Ben Gurion University	A-8980/2020	A	Farmstead (removed prior to excavation)	Plaster, mud-plaster, ceramic sherds	Loess and perishable materials	Stone basin, stone platform (adjacent to the section)	IAA archive	
6	Gev Yam	A-5896/2010	B	Entrance from inner-courtyard of farmstead		Loess		IAA archive	

Figure 8. *Byzantine Semi Subterranean Complexes in and Around Byzantine Beer-Sheva*
Source: graphics by Sahaf Shaked and Ilanit Azulay.

Discussion

In the mid sixth century CE Negev there is clear evidence of change. In the desert towns - urban disfunction and the collapse of municipal function took place as is reflected through the stop of organized trash collection. In addition, discontinuity in trash build up is dated to the mid sixth century CE suggesting a gradual abandonment by then.[27]

The sixth century was a time of turmoil in the Byzantine Empire. The year – year and a half of the "Dark Cloud" (536-537 CE), followed by a decade of the Bubonic plague (starting roughly in 541-2 in the Negev) resulted in abatement of the agricultural industry. It is unclear to what degree the year of the "Dark Cloud" affected the Negev but in more north-western lands the dimmed sun and

27. G. Bar-Oz, L. Weissbrod, T. Erickson-Gini, Y. Tepper, D. Malkinson, M. Benzaquen, et al. "Ancient Trash Mounds Unravel Urban Collapse a Century Before the End of Byzantine Hegemony in the Southern Levant," *Proceedings of the National Academy of Sciences* 116, no. 17 (2019), 8239-8248.

cool weather brought on a year of drought and food shortage which resulted in an economic decline, movement of populations, and political unrest.[28] The bubonic plague spread through the land affecting both humans and animals, followed by large numbers of casualties. The diminishing lower class greatly reduced the available work force directly affecting the economy.[29] Fields were left un-reaped and vineyards were not harvested. Wheat was not stored and grapes were not processed, the produce was not transported to the markets and famine spread. Labor wages increased, encouraging higher degrees of mobility and the abandonment of highly populated areas.[30] Another hypothesis suggests that the slow decline and collapse of the eastern Byzantine Empire affected the international markets which the Negev vine growing communities were dependent on, bringing hardship and eventually the desertion of the region.[31]

It is impossible to pinpoint the desertion of the region to one specific cause nor assume that it accorded in a single event. By the mid-sixth century CE the Negev settlements' population diminished, few of the fields were cultivated and the major city markets could not answer the demand. Taxes were not reduced and became an even larger burden on the existing population,[32] perhaps pushing the remaining people also, to move on. Archaeological studies in Scythopolis (Bet Shean) show that the building and renewal of the city, which was in full steam, came to a halt after 541 CE. A similar picture arises from archaeological excavations in northern Syria.[33] Following the patterns noted in Syria, churches continued to be erected and renovated in Byzantine Beer-Sheva through the seventh century CE.[34]

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28. A. Arjava, The Mystery Cloud of 536 CE in the Mediterranean Sources," *Dumbarton Oaks Papers* 59 (2005): 73-94.

29. M. Morony, "For Whom does the Writer Write? The First Bubonic Plague Pandemic According to Syriac Sources," in *Plague and the End of Antiquity: The Pandemic of 541-750* (ed.) L. K. Little, 59-86 (Cambridge: Cambridge University Press, 2007).

30. Ibid.

31. Bar-Oz, Weissbrod, Erickson-Gini, Tepper, Malkinson, Benzaquen, et al. "Ancient Trash Mounds Unravel Urban Collapse a Century Before the End of Byzantine Hegemony in the Southern Levant," 2019; Y. Tepper, T. F. Erickson-Gini, Y. Farhi, and G. Bar-Oz, "Probing the Byzantine/Early Islamic Transition in the Negev: The Renewed Shivta Excavations, 2015-2016," *Tel Aviv* 45 (2018): 120-152.

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Conclusions

Based on the sub/semi-subterranean complexes exposed and the historic, economic state of the region we tentatively suggest that the large number of farmsteads built throughout the second half of the sixth century CE is due to the gradual desertion of the Negev Highland settlements, possibly related to drastic effects of the bubonic plague. The sub/semi subterranean complexes were not a novelty in the region but do seem to have gained popularity and went through several adaptations. These may be related to rising need for security. Interestingly a silo was exposed in each of the "Central Bus Station" complexes. This is in contrast to farms surrounding the Byzantine city center where few silos were exposed, none within the sub/semi subterranean complexes. This fact may be related to the administrative organization which was perhaps based on central storage facilities.

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