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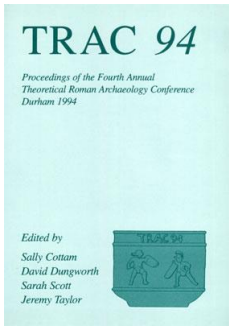

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7. Lighting in Late Roman Houses

by Simon Ellis

Introduction

The influence of lighting in Roman houses has never been systematically described. There are many reasons for this. It appears impossible to consider the physical effect of light and shadow in a room over two thousand years ago. There is also virtually no consistent evidence, apart from at Pompeii and Herculaneum, for the placings of light fittings and furniture within a room. Moreover until very recently psychological interpretation of the effect of lighting upon the 'social atmosphere' in a Roman house would not have been an acceptable part of Roman studies.

There are also several reasons why this situation has changed. On the technological side it is now possible to reconstruct Roman buildings with computers. The move towards 'virtual reality' has allowed us to walk inside ancient buildings. We can reconstruct the three-dimensional settings of Roman houses and their furniture. 'Ray-tracing' programmes are becoming commonplace. These allow the location of light sources and reconstruction of the effects of reflections from a variety of surfaces such as wood or marble.

Increasing interest in the subject of Roman houses has also led researchers to consider the 'atmosphere' and decor of the Roman house, and the impact this had on people who visited the building (Gazda (ed) 1991). The decor, wall painting and mosaic flooring, can now be seen as imparting a series of messages to the guest. These messages do not need to consist of deep mystical symbolism, but simple statements about the wealth and power of the owner.

The purpose of this paper is to examine the potential impact of lighting upon the 'atmosphere' of a Roman house, especially in the *triclinium*, the dining room or major reception room, as defined by Rebuffat (1969: 661).

The context for the paper is the Roman Empire of the fourth to sixth century AD. The houses considered will all belong to the uppermost echelons of Roman, or Byzantine society. At this time the *triclinium* normally consisted of an apsidal room. The apse contained a semi-circular couch or *stibadium*, which curved around a semi-circular marble table or *sigma* (Åkerström-Hougen 1974; Lavin 1962; Duval 1984; Ellis 1988).

The scene is now set. We are in an apsidal room at a dinner. The diners all lie on a couch at the far end of the room. The room is, of course richly decorated with coloured panels on the floor and the walls. The exterior can be seen through the triple arched doorway at the other end of the room from our dining couch. The time is around 1.30 to 2pm when the *cena* traditionally began (Carcopino 1956: 288). As it is early afternoon let us consider what natural light is entering the room.

Natural Light

For Vitruvius (*On Architecture* 6.6.7) good lighting was essential in a dining room.

> cum autem in tricliniis ceteris conclavibus
> maximus est luminum

His recommendation was that spring and autumn *triclinia* should face east, while summer dining rooms should face north to avoid the hot summer sun (Vitruvius *On Architecture* 6.4.2). However when he later discusses Greek houses he suggests that triclinia should face south (Vitruvius *On Architecture* 6.7.3). This confusion appears to be echoed by remains on the ground, in which there is no clear pattern of orientation.

In towns the constraints of the building plot and surrounding structures were of prime importance in determining the orientation of the rooms. Large rural houses were less constrained by surrounding buildings than by the local topography. A quick examination of villa plans in Northern Gaul (Wightman 1985: figs. 13–16), and a group of the largest late Roman villas (Wilson 1983: figs. 48–51) reveals some preference for a broadly eastern orientation, but includes several examples that face south or west. It was more important to have a large reception room preceeded by a peristyle court and a vestibule, than it was to have a dining room that caught the sun.

The View

The view to the exterior through the main entrance of the dining room was of great importance. Classical authors such as Statius (*Silvae* 2.2.83–97), Pliny the Younger (*Letters* 2.17.5, 5.6.19–20), and Sidonius (*Carmen* 22.215–220; *Letters* 2.2.12) all emphasise the view from the main reception room of the house as the centrepiece of any visit to a house (Bergman 1991; Ellis forthcoming).

Bergman (1991) also stresses inter-relationship of the view over the countryside from the villa, and the similar views preserved in Roman wall painting. There were certain desirable landscape features that should be seen such as a bucolic scene, or a peaceful harbour. These imparted a sense of tranquility. Just as it was therefore possible to create artificial views in wall paintings it was acceptable to create such scenes in the peristyle of an urban house so they could be seen from the dining room.

One of the main requirements for such scenes was water, and many houses took care to locate a fountain opposite the main entrance to the dining rooms. In late antique houses some of these fountains or *nymphaea* reached monumental proportions — Apamea (Duval 1984), Stobi (Kitzinger 1946, Wiseman 1973).

As the diners were grouped at the far end of the room, in late antiquity in the apse, the most significant view of the outside world was down to the other end of the room and through the triple doors of the entrance. As we shall see this could have seemed like the proverbial 'light at the end of the tunnel'.

Clerestory Lighting

To judge from reconstructions of Roman dining rooms the normal lighting of the apsidal dining room was from clerestory windows, along the sides of the room, or in the apse. Such reconstructions are based on the identification of the apsidal dining room with the basilican

architectural form. This is false in two respects. Firstly the basilica usually had aisles. This often led architects to place clerestory lighting in the upper part of the 'nave' over the aisles.

Secondly the focus of a basilica, when orientated like a dining room along its long axis, was on the centre of the apse where the great personality — orator, magnate, emperor or bishop would be enthroned. In the dining room the host was not in the centre of the apse but on the left hand end of the couch as one approached it (for the general arrangement of the dinner in late antiquity see Ellis 1988; 1991).

On the other hand archaeological remains of the upper parts of dining room walls, are naturally dominated by those better preserved rooms that were constructed into hillside terraces, such as the Hanghäuser at Ephesus (Strocka 1977). Needless to say if any lighting was possible in these circumstances it had to be through clerestory windows.

It is therefore necessary to try and examine what evidence there is for windows in regular, ground level, dining rooms.

The plan of the Roman house was such that the dining room was normally flanked by other rooms and only the apse, or the end of the room, faced the exterior of the building. If there were to be windows in the long sides of the room they would have to be clerestory, but there is little direct evidence to suggest their presence.

Several North African mosaics, from Oudna, Tabarka, and Carthage depict the main reception room of villas in elevation (Sarnowski 1978, Duval 1965). All of these depictions appear to show clerestory windows, but the images need a certain amount of interpretation to 'decode' the artistic conventions that are used in them. The evidence of these mosaics cannot therefore be taken as incontrovertible.

One of the only late antique houses in which there is evidence for the upper walls of the rooms is the Bâtiment à L'Huilerie in Salamis, Cyprus (Callot 1978). The house preserved a large amount of stucco decoration from the walls, including the complete decor of an upper storey room. The stuccos in both the upper storey room and the apsidal dining room consisted of two registers of pilasters. The columns of the upper register were joined by moulded stucco arches, and it is assumed that windows were located in the middle of each arched stucco frame. The location of the windows is still supposition and the first reconstruction by the excavators (Callot 1978: fig. 3) did not include them. Nevertheless the arrangement of the stucco decor is highly suggestive, and at least gives some basis for their putative locations and size, which were about 70cm wide and 90cm tall.

The house also had three windows in the apse itself. The wall of the apse was 1m thick. each window was 1m wide at the external face of the wall widening to approximately 1.2m on the internal face of the room. One window lay on the main axis of the room, and the other two windows lay at 45°to either side.

The large main apsidal room (for the interpretation of the function of this room see Ellis 1991) at Piazza Armerina also preserves the base of two windows in the apse, in a similar position to the two side windows in the Salamis apse (Wilson 1983: fig. 1).

The dinner progressed into the late afternoon and early evening, and the sun fell. Natural lighting was more and more dependent on glancing or reflected light from the upper side walls, the apse, or the main entrance.

That the Romans were very conscious of the effect of lighting on the atmosphere of the dinner can be judged from the use they made of *valvis*. The meaning of this term is not entirely clear, but it seems to represent folding wooden screens, shutters, or doors. They are mentioned in villa descriptions by Pliny (*Letters* 2.17.5, 5.6.19), and Sidonius (*Carmen* 22.207). They are

also mentioned in a seventh century AD Egyptian inventory of dining room furniture (POxy 1925.10 — 'ptuchia tes megales thuras').

The impression given by Pliny and Sidonius is that the folding screens were used for altering the aspect of the room so that the visitors' view of the outside world was directed in another direction. The emphasis therefore is that by closing a shutter, or screening off a window the guests appreciation of the 'ambiance' was changed. This indicates that the authors' realised the effect that lighting could have on their guests, and they sought to control it.

A reconstruction of the Bâtiment à L'Huilerie, using a computerised ray-tracing programme (Fig. 7.1) shows the effect of the lighting in the late afternoon. The reconstruction is not perfect in that the outside sunlight has only been approximately located to indicate its position in the late afternoon with reference to the orientation of the building, and windows are absent from the apse itself. It would in fact be possible to obtain a precise location using a calculated azimuth and indications of local topography. (Algorithms are even available to reconstruct various weather conditions, Fisher 1993.) The model does however take into account some sense of the smooth reflective nature of marble/plaster walls.

The process of reconstruction seems to indicate that light tended to reflect of the walls of the room into the area of the apse. Further more precise work would be need to follow this idea up with a number of different houses, but it appears that the apse was something of a 'light trap'. Considering that the apse was the focal point of the dinner this is not surprising, and it is possible that the room was deliberately designed with this in mind.

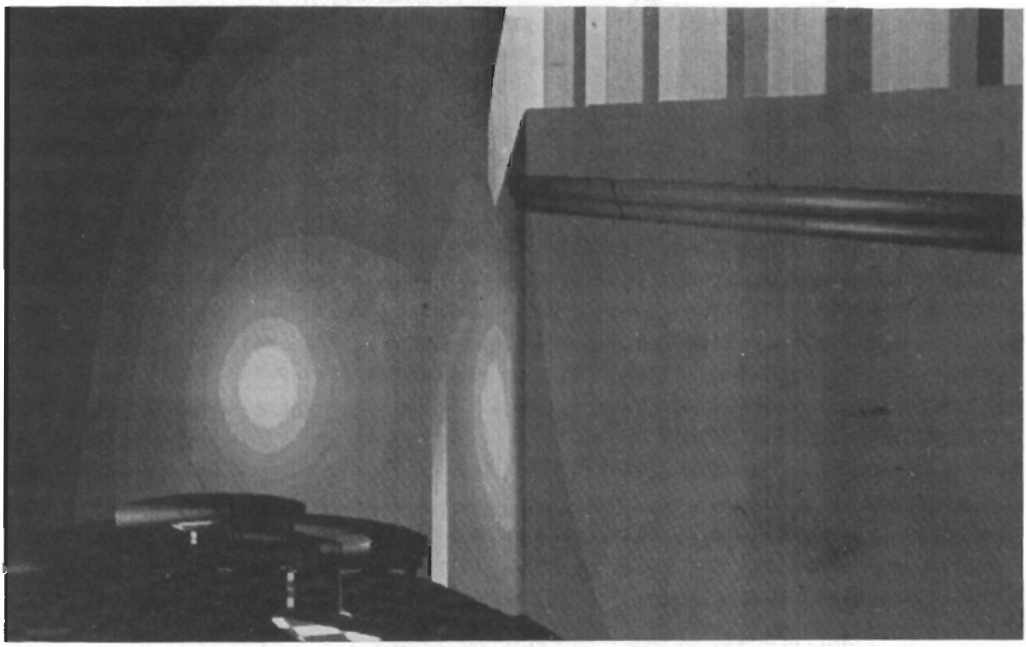

Fig. 7.1. Reconstruction of apsidal dining room at the Baitment de L'Huilerie, Salamis, Cyprus. The windows in the pase have been omitted to emphasise reflections from the clerestory. (A. Harvey).

Artificial Light

Finally as dusk falls the lamps are lit, but we know that dinners could go on late into the night, when Roman partygoers would try and reach home much as we do today!

The basic instrument for lighting in the late antique Mediterranean was of course the pottery lamp. Its ubiquitous presence in sizeable quantities on every excavation site makes it extremely difficult to tell whether it was just used as a portable object, or where it may have been deposited during a formal dinner.

Luckily for the archaeologist other forms of lighting became more popular in late antiquity. These new fittings were less portable than the old pottery lamp.

Firstly there were lamps in bronze and glass Bronze lamps were similar in form to their pottery counterparts, though they tended to be larger, more elongated, and with a small metal lid covering the oil chamber. This is the traditional form of lamp as represented in childrens' stories of Ali Baba.

Bronze lamps were naturally heavier than ceramic lamps, and perhaps for this reason, they tended to be put on lamp stands. Lamp stands had short tripod feet and a shaft about 0.5 to 1.5m tall. At the top of the shaft was a form of bowl or platform on which the lamp could stand. Alternatively the stand would be topped with a spike to form a candlestick. Examples of all these forms have been found in late antique domestic contexts at Sardis (Waldebaum 1983).

A 50cm high candlestick or lampstand was obviously designed to stand on other furniture. Since dinner tables were often no more than 50–75cm wide, and had to accommodate the platter and glasses of up to nine diners candlesticks cannot have stood there.

The middle and front parts of the room were generally free from furniture apart from any food for later courses of the banquet. It is thus unlikely that there were many suitable locations for short candlesticks anywhere in the late Roman dining room.

Tall lampstands or candlesticks, giving artificial light at around head height were probably used at dinner parties. Suitable locations would be along the walls of the room, perhaps near the main entrance, or close to the apse.

However the most popular form of artificial lighting in Late Antiquity was the glass lamp. This took the form of a small, open, conical cup — a small version of the later traditional mosque lamp. These are ubiquitous on any late antique archaeological site but the main typology for their classification is still that of Harden (1936) at Karanis in Egypt.

As a conical cup the glass lamp had to have a stand. Glass lamps were generally grouped in that most magnificent of late antique light fittings the misnamed *polycandelon*, or in modern terms 'chandelier'. The basic form of the chandelier was a bronze hoop about 20cm to 75cm in diameter. Attached to the outside of the hoop were a number of small rings, into each of which was placed a glass lamp. An example in the British Museum (British Museum 1921: fig. 62) could have held sixteen lamps and is likely to have hung in a church.

The use of such chandeliers in a domestic context can be demonstrated at the House of Bronzes at Sardis (Hanfmann 1960; Foss 1976: 43–4). On entering the dining room one groped for a niche just to the left of the door. This contained a small glass lamp which was found *in situ* by the excavators. This formed the light switch. Having lit this lamp it was carried to the chord of the apse where it was placed in a chandelier of six lamps. This was found where it had fallen, on the floor directly below its original location. It was 22.3cm in diameter, and the holes for the lamps were 3.0cm in diameter. When suspended from its bronze chain it hung at 44 cm below the ceiling (Waldebaum 1983: 101, cat no. 589).

The House of Bronzes at Sardis was destroyed in the seventh century AD, along with a row

of thirty adjacent shops. The cause of the destruction, accident or warfare, is still under debate, but it is clear that the owners of the various properties did not return to collect their goods. We can thus be relatively certain that this six lamp *polycandelon* formed the main lighting for the dining room in the house.

In this instance the dining room was a basement room with a single main door opening onto a long corridor, so that there was virtually no natural daylight in the room. Despite its basement location it had a rich *opus sectile* marble floor. Its function as a dining room is proved by the discovery of a marble *sigma* dining table in the appropriate location in the apse.

The almost complete lack of natural light is not typical of a Roman house, but the House of Bronzes serves to illustrate that natural light was by no means necessary. The Sardis house was not poor. The room was richly decorated with marble flooring and furniture, not to mention the bronze chandelier.

The presence of a bronze chandelier, or rich lampstands indicated the wealth of the house owner. Whilst one assumes that people of low status could afford several pottery lamps, bronze, especially when it was ornamental, would have been more expensive. It is possible that the intrepretation can be taken further than this by extrapolation. It is possible that a better lighted room itself implied a high status owner. To prove or disprove this hypothesis would require a full evaluation of the literary sources, which is beyond the scope of this present paper.

Discussion

Whether lighting in the late antique dining room was with natural light or artificial light it was concentrated on the apse where the dinner was taking place. The rest of the room was darker with deeper shadows being cast through glancing windows or doorways, and globes of light or smoke formed by candles and lamps on stands.

What effect did this have on the atmosphere of the dinner? Clearly it is extremely difficult to step aside from the emotional response such a room would give the modern guest. Perhaps it is safe to say the following. A major late Roman dinner was a long affair, during which the room passed from full daylight to long shadows and artificial lighting. This paper has demonstrated that for at least the later part of the meal the lighting was somewhat limited over the area away from the apse. Discussion has shown how partitions were used to maipulate daylight to impress guests, it would not be surprising if the effects of subdued artificial lighting were also used to create the dining 'ambiance' that the owner required.

One conclusion is that the Romans did not have our concept of 'blanket' lighting. This is primarily a result of the limitations of their artificial light. In modern times we suffer from the fluorescent 'tube' light, which from one source 'floods' the room with a uniform level of lighting. This 'flooding' of a room was not available from the low strength of Roman lights. The way that the Romans also controlled natural light suggests that they did not wish to 'flood' a room with daylight either.

If this is the case it is interesting to reverse the picture and ask about darkness rather than light. Since the majority of Roman houses (ie low status homes) were, in our terms, poorly lit perhaps darkness was seen as the norm. This could lead to the idea that darkness, or shadow, was desirable in some places in the house. It also begins to hint at the association of darkness with poverty, and hence (from a high status point of view) evil.

I have already indicated that the use of lighting in the room suggests that the Roman were aware of the effects of shadow. Light and shadow are two sides of the same coin, and to that extent if the Romans looked for more light in some corners of the room they also looked for

shadow in others. This conclusion to some extent answers the second point. There were deliberate areas of shadow in upper class dining rooms and this indicates that shadow was not of itself considered bad.

The direct association of light with good and dark with bad has of course many resonnances which are best dealt with in a study of religious symbolism. To end I might just add that this paper has shown that in the secular context both light and darkness were acceptable. The Romans were conscious of their effects and use.

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