

## FF/E: Preliminary excavation report.

### Introduction

The trench known as FF/E is located at the most south-easterly extreme of the site of San Vincenzo al Volturno. Excavations took place on three consecutive summers between 1991 and 1993. The trench encompassed an area measuring 15 metres by 7 metres, orientated north-south. After the removal of topsoils, the area was divided into two trenches (A1 and A2) on the basis of a wall (4915) aligned east-west, which separated the northern third of the trench from the area to the south. The area on the north side of wall 4915 was ultimately found to represent part of a thoroughfare or corridor which extended from east to west along the north side of the ninth-century rooms and workshops. This area was excavated as FF\E: A1 is here referred to as the "A-corridor". The area to the south of wall 4915 was excavated as FF\E: A2 and represents room A: one of a series of workshops and rooms which were constructed along the southern flank of San Vincenzo Maggiore during the early ninth century.

### Phase 3b\4a: Redeposited Clays

The earliest deposits to be identified within FF/E were a series of levelling or terracing clays which were identified throughout the workshop area. Two clays, 5359 and 5341, excavated in the A-corridor contained a few large pieces of crucible with glass adhering to their inner surfaces, together with many fragments of glass-working waste. The lack of associated kiln structures in the area suggests that the clays were redeposited from earlier industrial activity elsewhere on the site. To the south in room A and to the west in FF/D or room B, clean yellow clays (5225/5342) devoid of finds were covered by distinctive chocolate brown clays (5191/5186/5226) which contained further fragments of glass and crucible. Another of the earliest deposits to be identified in FF/E was a layer of extremely hard yellow mortar 5158 which extended northwards from the north-west corner of the corridor, below wall 4634 into FF/C2.

### Phase 4b: Evidence for the builders' yard, c.800-824.

The south wall of room A (5649) appears to be the earliest construction which, together with east wall (4931/5751) post-dates the clay levelling layers. It is possible that the latter wall originally extended further north into the corridor, where it then continued west for 1.2 metres. This is evident only in the form of a later robber cut, 5110, which aligns with wall 5751 and suggests that the wall was truncated and the north portion of it removed, when east-west wall 4915 was constructed above the glass kiln demolition levels. The early wall must represent part of the original layout of the builders' yard (now wrong alignment?). This phase of construction also includes the insertion of at least five monumental foundation blocks, 5293 in the A-corridor and 5021, 5098, 5167 and 5412 which although cut through the cobble surface in the B-corridor area, form part of the layout of the original builders' yard by

supporting an arcaded portico across the corridor area. In the A-corridor, the large stone block lies adjacent to the early, robbed wall 5110. It is possible that together, they formed an entrance feature leading into the portico. A symmetrical layout might exist in the B-corridor with block 5098, although this assumes the early existence of wall 4742. Further excavation would also be required in the area to confirm the presence of a robbed-out wall to equal 5110. At present, a single block has been identified, incorporated into the north-facing elevation of wall 4809.

A compact cobbled surface in room A (5746) made from limestone and quartz pebbles and tile fragments is also associated with the early phases of industrial activity (surface level = 547.49). The cobbles were well preserved enough to show that they post-dated the south and east walls of the workshop, whilst pre-dating a series of ash dumps and wall 4915. An identical, contemporary surface was identified in room B (5836) (level 547.54). A heavily compacted silty clay (5745) of between 4 and 8cm. in depth excavated from immediately above the cobbled surface in room A probably represents an occupation or activity layer relating to the builders' yard: finds from the clay included copper alloy wire, copper alloy and iron slag, glass, cullett and crucible.

On the present evidence, it is possible that the large building with the cobbled floor, formed by east, south and west walls 4931/5751, 5649 and (4742?) was used for the importation and storage of raw materials and glass cullett. The latter was probably imported on a large scale to San Vincenzo from local ancient sites or from abroad as ready-made raw glass (Mitchell 1986:18; Freestone/Price?). The temporary workshops identified further north, which housed the tile, bronze and glass kilns may have been a largely open area, roofed at its' southern end by a portico supported on large stone foundations. To the south of room A, two adjacent walls were found butting south wall 5649 on the same north-south alignment. These were associated with mortar surfaces 5343 and 5734 which probably represent part of an outside yard surface or track, contemporary with the cobbled area.

#### Glass kiln demolition

Demolition levels, almost certainly derived from the destruction of the glass kilns in the temporary workshops were extensive across the whole of the southern workshops and corridor area, pre-dating the construction of the interior walls. In the A-corridor, the destruction deposits comprised a red-brown sand and clay matrix containing burnt and smashed tiles, charcoal, ash and pieces of quartz (5259 and 5260) (547.49). The levels contained incredible quantities of finds derived from glass-working including crucible, frit, moils, glass waste, vessel and decorated glass, reticelli rods, tesserae, pottery (including glazed), together with a bronze engraving tool, a lead object and two flint flakes. The clays are probably contemporary with a cobbled area in the north of the room, 5135 (547.47) which was used to level off the ground over blocks 5293-5297 after the demolition of the portico. See 4941? in B-corridor.

### Phase 5a.1: The layout of the Southern Range of Workshops (824-30)

Many of the inner walls of the craft workshops (A,B,C,D,E and Z) were constructed slightly later than the funerary atrium, probably during the 820's.

Room A comprises the area excavated as FF/E A2. Stratigraphically, the walls delineating this workshop post-date the deposition of both the clay levelling layers and the glass kiln demolition layers (construction cut?). In the adjacent room B there is evidence for the insertion of west wall 4008 with construction cut 5152 into glass dumps 5143/8. Construction cut 5364 shows the insertion of the central wall, 4915 which separates room A from the corridor area to the north, into the upper levels of demolition layer 5259. Wall 4915 originally continued to the west as 5351, to form the north wall of room B.

The extension of the eastern limit of excavation along the line of wall 4915 surprisingly revealed a 0.6 m. wide piece of black (reduced) bell-mould core, derived from the inner rim of a bell during casting. The bell-mould suggests that the finished bell had a diameter of between 0.45-0.5 m. and weighed in the region of 50 kg (pers com. Agnone). The bell-mould was found lying against the north side of wall 4915, stratified between a series of (phase 5b) mortar deposits. The residue may be derived from a large bell-casting pit (5677) which was located nine or ten metres to the north in trench FF\C-2. In terms of dating, pieces of bell mould found in the construction cut for the south wall of room A (5649) show that bell-casting may have already taken place in the open, prior to the formation of the southern range. Small pieces of bell-mould were also found in the construction cut for wall 4915. Consequently, the large piece of core either represents an earlier disturbed deposit or the product of a second casting episode.

### Phase 5a.2: A second phase of glass production and secondary levelling

The floor levels in FF/E appear to have been raised further after the construction of the walls delineating the phase 5 complex. In the A-corridor, three additional clay levelling layers (547.59) were found butting wall 4915 and sealing robber cut 5110. The clays, 5112, 5113 and 5117 contained mortar, tiles and copious quantities of crucible and glass, together with a copper alloy coin (illegible?) and a ring setting.

In room A, a number of finer deposits were used to raise the level of the floor: mounds of ash and charcoal 5197, 5198 and 5218 (Cu lumps\slag) and a silty clay 5217, all containing glass and crucible, were deposited above the cobbled surface. The uppermost level, 5200, a dump of ash, clay and charcoal was particularly rich in finds: over 1500 fragments of glass were recovered which included vessel and gilded glass, glass waste, crucible and tesserae. Other objects included a silver-plated gem setting, a bead, two ceramic discs(?), a

copper alloy strip and an iron knife-blade or tool. This successive series of redeposited glass levels suggests that a second phase of glass production had been in operation within the temporary workshops, during the formation of the southern range. This theory is upheld by the glass kiln (5711) excavated in FF/F, which showed at least two main phases of construction. A minute fragment of gilded glass similar to those recovered from kiln 5711 was recovered from layer 5200.

#### Phase 5b: The refurbishment and subsequent destruction of the enamel workshop. c. 848-881.

Well-stratified changes which took place at some time prior to 881 are apparent within room A. These may have been instigated as a result of the earthquake of 848 (Ref:) in which parts of the monastery were damaged. A bench was constructed along the east wall of the room above the existing cobble floor. The ashy deposits rich in glass were then sealed by a thick yellow mortar foundation, 4992/5698 which butted both the west side of the bench and the south wall of the room. Traces of wall plaster were also found adhering to the west side of the bench. The renovations were completed by the addition of a fine tiled pavement, which was evident from surviving fragments and where absent, from distinct impressions visible in the mortar foundation. A possible silty occupation layer, 5693, stratified above the tile floor, contained a little copper alloy slag and crucible, together with the following small finds:  
sf.1448, a small open-ended bronze ring 547.51;  
sf.1449, a fragment of bronze beaded wire 547.51;  
sf.1465, a small iron chisel or tool 547.47;  
sf.1467, four fragments of bronze sheet 547.50;  
sf.1468, a small tack made from sheet bronze 547.38:

In some parts of the room the occupation layer had formed directly over the mortar foundation of the floor (4992/5698) or above the earlier clay surface 5745, suggesting that the tile floor had fallen into quite some disrepair prior to the destruction of the workshop. A terminus anti-quem(?) of 817-832 is provided for the new workshop by two silver deniers of Prince Sico of Benevento, recovered from the clay occupation layer, 5745, above the cobbles and from the mortar foundation level of the new floor, 5698. A copper alloy coin also recovered from 5745 was unidentifiable.

#### Phase 5c: Destruction and abandonment

The refurbished room was destroyed by fire at some time during the ninth century and probably as a result of the Saracen attack of 881: a diagnostic arrowhead was recovered from the black destruction levels. A black gritty deposit 4941/5037/5676 containing charcoal, mortar and pieces of vitrified

tile covered the whole of room A. The fact that the room had functioned as an enamel-makers' workshop prior to the sack, is testified by the rich assemblage of finds recovered from the burnt layers: Layer 4941 contained four fragments of vessel and window glass together with:

sf.0765, a fragment of bronze plate or sheet;

sf.0798, a perforated iron rod with hooked end

sf.0810, a bronze sheet fragment with decoration.

Layer 5037 contained a few fragments of glass-working waste, vessel glass and tesserae, together with....

Layer 5676 contained two fragments of glass, glass crucible, copper alloy slag and small finds:

sf.1450, a bronze square-profiled strip 547.55;

sf.1451, a Roman gem-stone, possibly Carnelian or Sard, engraved with a figure making an offering 547.51;

sf.1452, a curved bronze pin 547.54;

sf.1453, a tray of enamel with a long-stemmed blue and white flower 547.50;

sf.1457, a fragment of worked jet/shale 547.56.

In addition to the above, a number of similar finds were recovered from the topsoil in the southern-most extent of room A. The stratigraphy in this area had been disturbed by deep ploughing and consequently, as their levels suggest, these finds probably relate to layer 5676 which was found immediately below topsoil 5632:

SF.1392, a two ounce bronze Byzantine weight 547.56;

SF.1396, a heavy decorative oval bronze fitting 547.55;

SF.1397, a fragment of bronze beaded wire 547.56;

SF.1398, a bronze awl-like object with a perforated end,

SF.1404 & SF.1405, two fragments of bronze plate or sheet 547.60  
& 547.49;

SF.1408, a bronze and silver tray of cloisonné enamel with a blue and yellow foliate design on a green background 547.72;

SF.1424, a bronze buckle? fragment 547.37

SF.1426, a purple glass roundel or ring setting imitating an amethyst 547.40.

There is no evidence for similar refurbishment in the corridor to the north, with the contemporary levels being represented by a variety of discontinuous mortar surfaces or dumps (5115, 5118, 5292, 5257, 5343, 5402 and 5403) between which was stratified the piece of bell-mould. Two deposits 5111, a clean silty layer and 5116, a small mound of fine ash containing glass crucible, waste glass, glass vessel fragments and particles of bone were found overlying the mortar surfaces. The deposits in the north room were then sealed by the

distinctive burnt horizons: black layer 5029 contained glass crucible and a number of small finds including:

SF.1026, a Saracen arrowhead 547.66;

SF.1010, a pointed iron object with a hollow stem for a handle fitting 547.68;

SF.1060, a rectangular iron object, possibly part of a fitting

SF.1000, a heavy bronze triangular mould or stamp with a central recess 547.73.

A second burnt deposit, 5041, contained complete roof tiles, glass-working waste, glass vessel fragments, metal slag and animal bone. 21 tesserae in opaque blues and greens were also recovered together with small finds:

SF.0793 and SF. 0805, fragments of bronze plate or sheet

SF.0806, an iron rod with a hooked end, similar to that found in room A.

The sealed deposits in room A and the corridor provide evidence for the final activities taking place in the two workshops prior to their destruction. In the corridor in particular, many of the glass and crucible fragments were retrieved from the interface of the black layers and the mortar surfaces. A preliminary assessment of the finds recovered from within and beneath the destruction deposits in the two areas provides interesting implications for the division of activities between them: room A exhibits a noticeable wealth of finished metal objects including enamels, together with a few fragments of copper alloy slag and crucible. This is combined with a distinctive lack of glass and glass crucible: only ten glass fragments in all were retrieved from the occupation layer and destruction deposits of the workshop, four of which were vessel glass. By great contrast, no finished metal pieces were recovered from the corridor, which contained only tools and metal raw materials. Furthermore, over 60 fragments of glass and a large quantity of glass crucible were recovered in the corridor, together with 26 opaque Roman glass tesserae. In summary, the evidence from FF/E suggests that room A with its' bench and tile floor may have been used for the delicate refining and finishing of enamels and precious objects. The actual smelting and enamelling processes were probably carried out in the corridor to the north.

1.No access from room A to adjacent corridor area? - windows\window glass?

2. how do corridor findings relate to B-corridor deposits?

3.Do results tally with extra finds?

#### Phase 6a & 6b: Alteration and rebuilding

In the corridor, a new clay and mortar working surface, 5038 (547.65 ie. 18 cm above the last floor surface), was deposited directly above the old destruction levels. Apart from a few fragments of tessera and pieces of animal bone, the floor was devoid of finds. The surface butted wall 4915 and seemed to be confined to the A-corridor, although it probably extended to the west, to the B-corridor area, and to the north. The floor may be associated with the

monks' partial resettlement at San Vincenzo in the early tenth century. A number of rubble deposits covering the floor surface, suggest that substantial alterations were made to the A-corridor at the time of the construction of the cloister wall (4033) in the 11th-century. The rubble layers included 4866, 4945 and 5024, the latter containing a thick layer of dark silt containing large stones, pottery, vessel glass, copper alloy slag and animal bone.

A period of small-scale industrial activity is evident in the corridor during the 11th century. This is visible in the form of a small oval kiln (4750) 0.45m. deep, cut into the rubble layers, which contained a layer of ash and charcoal with lenses of brown clay (4949) and an uppermost white clay and ash fill (4844). Apart from a single amber-coloured rim fragment of a glass vessel found in an associated mortar deposit, 4946, no finds were associated with the kiln, making its' function rather hard to determine. A possible structure, 4843, located to the east of the kiln, comprised a line of un-mortared but well-placed stones set on a yellow mortar base. The structure may represent the remains of a bench or working platform. A mixed rubble layer present in both room A (4885) and the corridor to the north (4845) represents the demolition of wall 4915 and the resulting unison of the two areas. A sequence of rubble layers (4826, 4841, 4813) and postholes (4818, 4831) in the corridor area suggests a construction phase which may be associated with the building of the bell-tower in FF/C2: a cut for the insertion or alteration of north wall 4634 (4796) was associated with this phase. After the construction of the bell-tower and the removal of the central wall, a period of unidentified activity is visible within the corridor.

Update (do separate corridor matrix):

In corridor are rubble layers 4826, 4841, 4813 (black).

Cut by post holes 4819, 4831.

Followed by 4792: black tip 0.3m. deep which covers postholes. (is this same as 4617\4777 in B-corridor?)

Tip is cut by late features 4799, 4802, and covered by mortar surfaces or tips: 4815, 4790.

Need to sort out tips and wall relationships: 4792 tip is below 4815 mortar surface. The surface appears to have extended to the north into bell-tower area. Is this the level that 4797\4796 late construction cut was made - in order to block off the area with rest of 4634 -poss. contemporarily with the cloisters? Nb in 1991 a layer of silt 5166 was found going under wall 4634 and this overlay 5158- a hard yellow mortar surface (also went below wall. 5158 overlay 5259- the glass and crucible layers in the corridor. Cloister wall 4033 was built above 5166 silt

4634 bell-tower wall.

4634 and 4033 tower & cloister

4797\4796 late wall cut		5166 silt
4815 mortar	====?	5158 mortar
4792 tip		
		(5259 glass tips)

This takes the form of a number of shallow cuts and postholes and various rubble and mortar dumps and rough surfaces (numbers?). These features represent the final activity in the corridor area, possibly relating to the twelfth century demolition phase.

A similar sequence is evident in the room A: at some time after the sack of c.881, the burnt remains of the room were sealed over by a layer of dark grey clay and mortar, 4932/4898/5171 (547.81) containing tile, pottery, bone, glass and a few fragments of copper alloy slag and crucible. The layer butted the bench along the east wall. The floor surface was cut by the construction of the east wall of the eastern range of the cloister, 4033 and was subsequently covered by a levelling layer of brown clay, 5190, which butted the new wall. The clay contained a few fragments of copper alloy slag which may be derived from the level below. At some time after the formation of the cloisters (or contemporary with it?), a step 5170, and threshold 5169, leading from room A to the east range were inserted into wall 4033. The bench was removed from the eastern side of the room during this phase and a new mortar floor, 4893 was added, butting wall 4915.

Evidence for the final demolition of room A is subsequently provided by a robber cut 4970 which shows the removal of east wall 5751. A number of clay tips 5173,5174,5180,5184, post-dating this activity were located in the south east corner of the room. These layers probably date to the final demolition and abandonment of the site in the 12th-century.

Karen Francis, March 1996. Updated April 1997.

Bibliography.



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### Thoughts and Queries

in ff/e, contemporary levels in north are always 15-20cm. higher than those in the workshop A. Check ff/c2.

First glass kilns must be contemporary or built into clay levels, possibly having cobbled yards to the south - perhaps for the import/storage of raw materials (note finds of glass cullett found in association). This suggests an open area which would be in keeping with accounts (see Venetian kiln) but check walls in FF/F. After the construction of the church (?) the first glass kilns were demolished and the resulting debris was used to raise up the level of the workshops (WHY??). Were there problems with flooding as there are today on that part of the site? The walls of the workshops were then constructed above the kiln demolition levels and at the same time, an arcade was built to the north. Need to now identify the contemporary happenings in other trenches.