SHELLS FROM EXCAVATIONS AT THE SYDNEY CONSERVATORIUM OF MUSIC 1998-9.

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1.0 INTRODUCTION

This report presents and discusses data on marine shells recovered from Casey & Lowe's 1998-9 excavations at the Sydney Conservatorium of Music site (Casey & Lowe 2000). The shell data are presented in the attached catalogue (Appendix C) and are also available in electronic form from Casey & Lowe Associates. Egg shells, presumed to be chicken, which were bagged together with marine shell, are also reported on here and are included in the marine shell catalogue.

This report has the following aims:

1. To provide a guide to how the catalogue was produced to assist other researchers who may wish to access or use the data for future research.

2. To present a general descriptive overview and discussion of the shells from the site to highlight any interesting or unusual patterns in the data.

3. To outline the research potential of the shells and suggest further work that might usefully be carried out on them.

2.0 GUIDE TO THE SHELL CATALOGUE (APPENDIX A & B)

Shells from the Conservatorium were identified using reference collections held by the department of Prehistoric and Historical Archaeology, University of Sydney and by reference to Bennett (1992) and Jansen (1995). Scientific nomenclature follows that used by Attenbrow (1992), except where noted below.

Data were recorded and coded using a system developed by Sarah Colley (see Appendix A) which allows for a range of information to be recorded for each shell fragment. All shells recovered from the site were examined and recorded as described below.

Context Codes

The fields (Context#, Area, Spit, Square) are the same as those used for all material recovered from the site (see Casey & Lowe 2000).

(Number Code) Number of Shell Fragments

This records a simple count of the number of shell fragments of each type.

(Shell Type Code) Taxon (e.g. Family, Genus, Species)

Shells have been identified as far as possible to Class, Sub-Class, Family, Genus and Species. Most of the shells from the site are from marine molluscs. Identification criteria for molluscs in published work are based on some features which cannot usually be applied to archaeological material (e.g. colour of shell, form and shape of the animal inside the shell). Therefore in some cases it is simply not possible or practical to identify shells beyond Family, Genus or even Class or Sub-Class.

The coding system for taxon (see Appendix A - Shell Type) has been designed so that new codes can be devised in a logical way. The four letter code uses the first two letters of the Genus (where known) and the first two letters of the Species (where known). For example, *Anadara trapezia* (Sydney cockle or mud ark) is coded as AnTr. Where only the Family is known the code consists of the letters 'Fa' (for Family) followed by the first two letters of the scientific family name. For example, Family Littorinidae (Periwinkles) is coded as FaLi. Codes for shell names which do not conform to these patterns are self-explanatory

Egg shell, assume to be chicken, has been recorded in the catalogue as 'Eggshell'.

(Shell Wt (g) Code) Weight in grammes
This was not recorded in the catalogue as all quantification was based on fragment count.

(Fragmentation Code) Percentage of whole shell preserved
This gives some indication of whether we are dealing with whole or nearly whole shells, or with small fragments.

(Shell Condition Code) Burnt, eroded etc
As well as the physical condition of the shells this code also records cases where there are tiny, complete shells in excellent condition (several examples of which occur at the Conservatorium), and cases where both halves of a bivalve (e.g. oysters, mussels) were found still articulated or joined together.

(Comments Code) Any other relevant information

Note on Catalogue Numbers and the way shells have been bagged
It is common practice in Australian historical archaeology when studying non-faunal material (such as ceramics, metal, glass etc.) to give each individual item its own catalogue number. This requires that the catalogue number be marked on the item, or that each item be placed in a separate bag with its own individual label. Such a system allows individual finds to be easily and safely stored and/or physically compared with finds from other archaeological contexts without losing original context information.

The benefits to be gained by treating faunal remains (animal bones and shells) in this way are not normally justified by the considerable extra costs involved in time, materials and storage space. Therefore the shells from the Conservatorium have not been given individual catalogue numbers. Each shell fragment was removed from its bag only to identify and record it, after which it was returned to the bag. Shells are therefore bagged by their archaeological context number only. Catalogue Numbers in the catalogue relate to bags of shell. If anyone needs to locate a particular shell fragment they will need to sort through the context bag and try to match the shell with the data recorded in the catalogue. The only exceptions are for a few unusual shells which could not be identified immediately, which have been bagged separately.

3.0 DISTRIBUTION OF SHELLS ACROSS THE SITE

A total of 1669 marine shell and egg shell fragments were recovered from 26 contexts (Table 1). This represents only a small proportion of contexts recorded for the site (see Casey & Lowe 2000 for further information), and shells were present in far fewer contexts than animal bones, which were found in 60 contexts (Colley 2000). Only five contexts contained shell but no bone (#668, #1025, #1028, #1038, #1045, #1051). Details of these are shown in Table 1. In all of these cases only one shell fragment was recovered from the context.

Table 2 shows a break down of total number of shells by Phase Number (see Casey & Lowe 2000), with the contribution from each separate context listed. Overall Phases 3 and 5 produced the largest shell samples. Of the 972 shells from Phase 3, most derive from Contexts #1004 and #1005. These are both Phase 3.1 alluvial deposits (from the period of Stables construction) but which are thought to contain artefacts dated to the initial period of European settlement (Phase 2) from the Bakehouse (c. 1800 - c.1815).

Of the 476 shells recovered from Phase 5, the vast majority (423) are from the Cistern (Contexts #603-611) which appears to have been infilled in the 1850s, by which time the building was being used as the Government Stables. The only other group of contexts which produced any significant number of shells (109) were the Garden Beds (1845 - c.1894) Contexts #901-974.

For the purposes of the following discussion, only shells from selected Contexts (i.e. those with larger sample size and/or of particular archaeological interest) will be discussed in any detail.

4.0 FREQUENCY OF SHELLS

Table 3 lists all the types of shells identified at the Conservatorium site and indicates their presence and absence in the major contexts (#1004, #1005, #603-611, #901-974). Table 4 shows fragment counts for shells from these contexts and for all contexts combined.

For the site as a whole, and in the main contexts, the samples are totally dominated by mud oysters (*Ostrea angasi*) and/or rock oysters (*Saccostrea cucullata*) and oyster shells (not further identified).[1] While a wide range of other shell types were present on the site, these occur only in very small quantities. Figures 1-3 have been constructed to show the relative proportion of the main shell types (expressed as percentages) for the site as a whole, and for the main contexts. In these diagrams shells have been grouped together as follows.

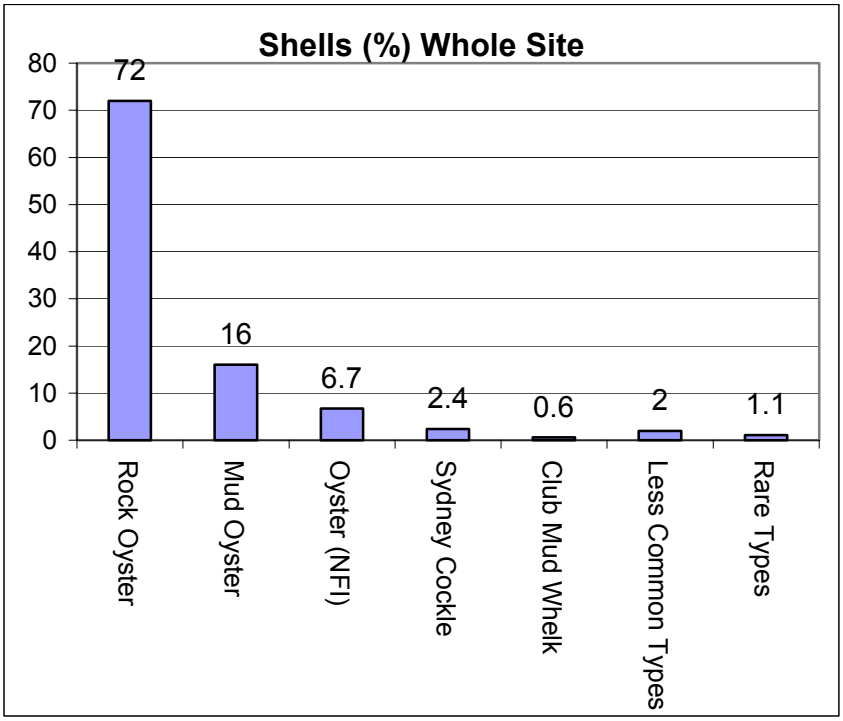
For the site as a whole, the next most frequent shells after oysters were Sydney cockle (*Anadara trapezia*) (36 fragments) and club mud whelk (*Pyrazus ebeninus*) (10 fragments). The frequency of each of these shells is shown separately in Figures 1-3. A number of shells were represented by between 6-2 fragments each. These have been grouped together as 'Less Common Types' in Figures 1-3 and include: hard coral (not further identified), (6 fragments); triton (*Cabestana spengleri)*, (5 fragments); Venus shells (Family Veneridae*)* (5 fragments); periwinkles (Family Littorinidae), (5 fragments); cowrie (Family Cypraeidae),(4 fragments); southern mud whelk (*Velacumantus australis)*, (2 fragments); and unidentified gastropods (2 fragments).

All other shells, grouped together as 'Rare Types' were represented by a single fragment or specimen and are listed in Table 4 (with scientific names given in Table 3 and Appendix A).

Figures 1-3 (and the data in Table 3) show some interesting patterns in the relative proportion of shell types from the site as a whole and for the main contexts, as follows:

[1] These shells are mostly very small fragments which are probably either *Ostrea angasi* (mud oyster) or *Saccostrea cucullata* (Sydney rock oyster) but cannot be accurately identified to either species. A single specimen of another oyster species, though to be *Chama fibula* (spiny oyster) was found in Context #1004.

Figure 1. Shell fragments (%) for Conservatorium All Contexts

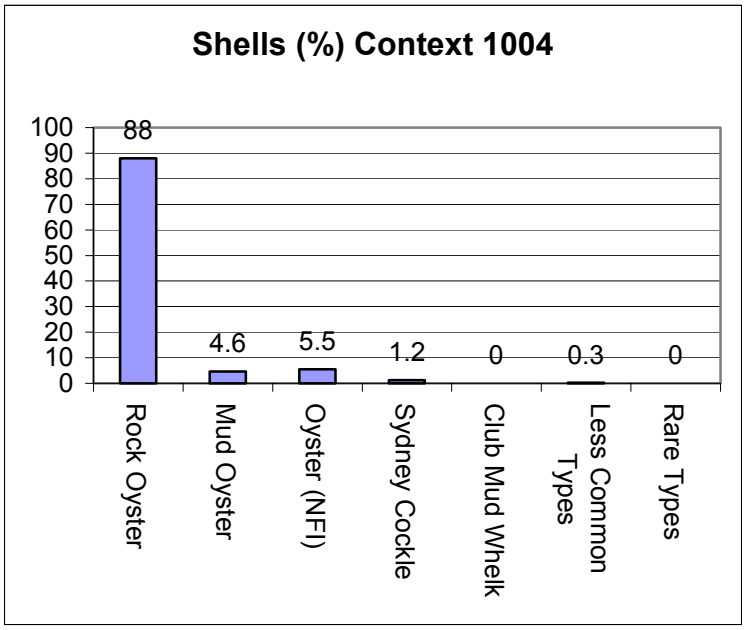


4.1 Contexts #1004 and #1005 - Alluvial Deposits (c. 1817)

These contexts are significant because the deposits are thought to date to the initial period of European settlement (Phase 3) and to derive from nearby (c.1817). They are both alluvial deposits (meaning the material in them has been moved from elsewhere by water). They are currently presumed to have been re-deposited from within the immediate vicinity. All the soil was dry sieved through 5 and 2.5 mm sieves.

The vast majority of shells in both these contexts are oysters. Sydney rock oyster is common in both contexts, but in #1005 the most frequent type of shell is the mud oyster, which is very poorly represented in #1004. Sydney cockle is found in small quantities in both contexts, but other than this almost no other shells were recovered.

Figure 2. Shell fragments (%) for Contexts #1004 & #1005



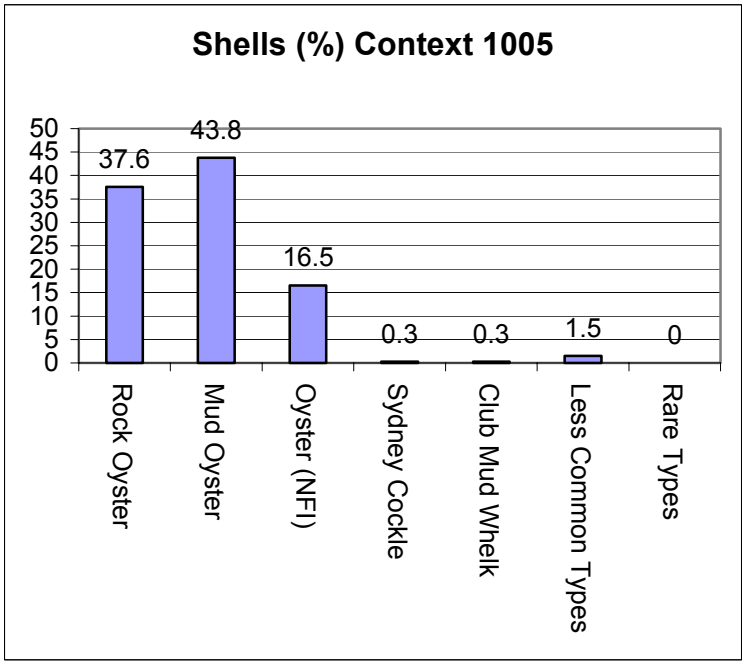
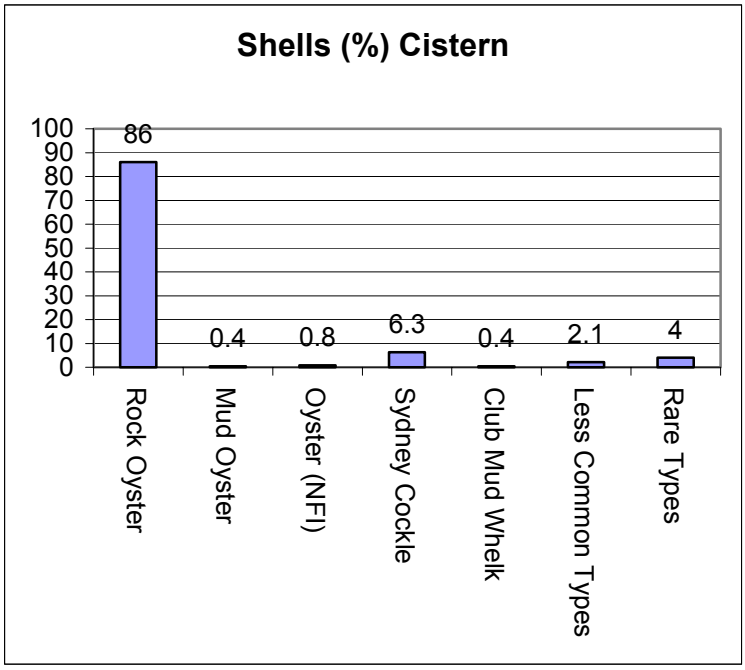
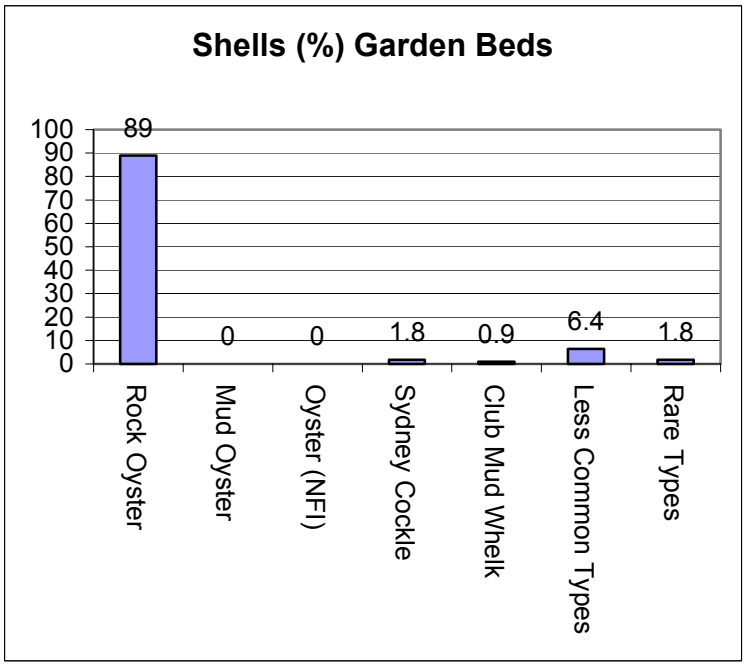


Figure 3. Shell fragments (%) for Conservatorium Cistern & Garden Beds Contexts.





4.2 Cistern (Contexts #603-611)

The Cistern appears to have been infilled by 1845 by which time the building was being used as the Government Stables. It is significant as one of the few deposits with large quantities of artefacts, and additionally was one of the few that had expensive ceramics that may have been used by the Governor and his family. All soil from the Cistern fill was sieved through 2 mm and 5 mm meshes.

Again, rock oyster predominates (88% by fragment count - see Figure 3, Table 3), and mud oyster is hardly represented at all. The next most common type was Sydney cockle (6.3 %). As with the rest of the site, all other types were very rare. The most interesting thing about the Cistern is that is contains a much wider range of shell types than any other context (Table 3). 19 different categories of shell were identified for the Cistern compared with only 9 for the Garden Beds, 8 for #1005 and 5 for #1004. However, none of these types of shell was represented by more than a few fragments each and in many cases only a single fragment of each type was recovered.

The Cistern was also the only context from the site which produced any egg shell (presumed to be chicken - 185 fragments) (see Table 4).

4.3 Garden Beds with Rubbish (Contexts #901-974)

These contexts were a group of garden beds dated between 1845 and c.1894, which are thought to have been contemporary with each other. They produced quantities of domestic refuse which may have been dumped there by the occupants of the Stables. By this time the beds were located behind, and screened from public view by, a garden wall built by 1841. This presumably enabled the area to be used for more domestic activities (such as dumping rubbish) than when it had previously been open to public view by people walking in the Domain.

Shells from the Garden Beds (Figure 3, Tables 3 & 4) are completely dominated by Sydney rock oysters and no mud oysters were found at all. As with all other contexts a range of other shells were found, but all in very small quantities.

5.0 DISCUSSION

Questions which can be asked of shell collected from historic sites in Sydney, about what is the origin of the material and what does it represent, are as follows:

1. Are the shells re-deposited natural beach deposits which have become accidentally mixed in with archaeological deposits?

2. Are the shells re-deposited Aboriginal shell midden which have become accidentally mixed in with archaeological deposits?

3. Do the shells derive from mortar? In the early days of the colony there was not enough lime to make mortar so people collected shells, including many from Aboriginal shell middens, and ground these down and burnt them for this purpose (Proudfoot *et al* 1991:39).

4. Were the shells collected for decoration?

5. Were the shells the remains of meals?

6. Could all the shells have been obtained locally? If so, are they likely to have been collected from the immediate vicinity of the site or brought in from elsewhere?

7. In the case of oyster, are these likely to have been collected from the wild, or were they farmed?

For the Conservatorium it is most unlikely that the shells represent natural beach deposits, redeposited Aboriginal shell middens or shells which have already been ground up and incorporated into mortar. Attenbrow (1992) has discussed criteria for distinguishing naturally deposited shell beds from Aboriginal shell middens in the Sydney region and the Conservatorium shell is very different from either of these. The key point is that the Conservatorium shells are predominately large, complete or near rock oysters and mud oysters and all other shells are represented only in very small quantities. This pattern is not caused by differential preservation or excavation methods as the soil from the most important contexts was all sieved. If the shell was mainly redeposited midden or natural beach it would contain much greater quantities of the less common species, in a range of sizes, and would not be so clearly focussed or targeted on oysters of a certain size. Nor is the shell from mortar as the fragments are large and complete with very little evidence of burning or having been deliberately broken up by grinding.

In most cases the collections are likely to be the remains of meals of rock and mud oysters, perhaps supplemented by a few Sydney cockle and southern mud whelk and club mud whelk. However, the nature of some contexts (e.g. #1034, #1004, #1005), and the kinds of other archaeological material they contain makes it less likely that all shells were primarily meal remains (Casey & Lowe 2000). A more likely explanation, especially for the presence of so many large mud oysters and very little else, is that these shells were deliberately collected and stock piled in order to use them to make lime for mortar production. In this case they may have been taken from Aboriginal shell middens or they may have been collected for food and then the shells retained. Radiocarbon dating could assist in determining whether the shells derive from Aboriginal middens, but only if the Aboriginal shell middens were themselves older than 300 years or so, as the method is not reliable for the more recent past (Murray-Wallace and Colley 1997). It is also relatively expensive.

Less common and rare shells from the Conservatorium, which are all present only in very small numbers, are likely to have derived ultimately from natural beach deposits (e.g. when these got mixed in with the soil). A few shells (e.g. cowrie, spider shells) have decorative properties and may have been picked up from a beach and carried back to the site by a collector and then been thrown away.

Table 3 lists presence/absence of the different types of shell according to the environment or habitat in which they are most commonly found. Shells from a range of environments are represented in the samples, but on the whole most shells derive from estuarine sandy environments rather than exposed rock platforms.

There are numerous references to settlers collecting oysters from around Sydney harbour until at least the 1840s.[2] Further historical research is needed to say if the shells were collected from near the site or brought in from elsewhere. As most of them are large oysters, it would be necessary to look for references to collecting oysters and where good oyster beds were located and to what extent shell fishing in the early days of the colony was a casual affair or organised as an industry. There is no particular evidence that any of the oysters were farmed (e.g. the bases of the shells were flattened from growing on planks or other hard surfaces - Val Attenbrow, personal communication). More research needs to be carried out on the history of oyster farming in Sydney.

[2] Mary Casey, personal communication. The scope of this study precludes further research to document this.

One interesting point is the presence of so many mud oysters in the early contexts (#1004 and #1005) and their virtual absence in the later contexts (Cistern and Garden Beds). Some of these mud oysters are very large indeed (much larger than farmed mud oysters available commercially today). According to Val Attenbrow (personal communication) mud oysters no longer occur in Sydney Harbour today although they are common in many Aboriginal shell middens and in other historic sites.

Another interesting pattern in the data is the much wider representation of shell types (although in very small numbers each) in the Cistern compared to the other contexts. This pattern ties in with the general 'richness' of material from the Cistern in general, which is reflected for example in the animal bones from the site (Colley 2000).

6.0 SUMMARY & CONCLUSIONS

- **1484 fragments of marine shell were recovered from all contexts**
- **185 fragments of egg shell (presumed to be chicken) were recovered from the Cistern**
- **At least 29 different types of shell are represented on the site.**
- **The shells derive from a range of environments but it is not possible to say if they were collected from the immediate area of the site or brought in.**
- **Most of the shell came from four contexts or context groups: Alluvial Deposits (#1004 and #1005); Cistern (#603-611) and Garden Beds (#901-974).**
- **The vast majority of shell from the site was Sydney rock oyster, followed closely by mud oyster.**
- **There were moderate amounts of Sydney cockle and club mud whelk.**
- **Most other shells were represented by less than 10 fragments each and 17 types were represented by only a single fragment of shell each.**
- **The most significant difference in the types of shell found in the main contexts was that #1004 and #1005 contained a lot of mud oysters, while these were uncommon or rare in other contexts.**
- **Mud oysters were almost entirely absent from the Cistern and Garden Beds.**
- **Mud oysters are common in Aboriginal shell middens but are no longer found in Sydney Harbour today, probably because their habitat has been destroyed.**
- **The Cistern contained a much wider range of shell types than other contexts, reflecting its general 'archaeological richness'.**
- **The oysters and a few other shells are likely to be mainly food remains.**
- **Large shells from some contexts (eg. #1034, #1004, #1005) may have been collected and stockpiled for mortar production. This conclusion is based on the nature of these contexts and other archaeological materials found in them.**
- **The shells do not derive primarily from re-deposited shell beds, re-deposited middens or from mortar which has already been produced.**

7.0 ACKNOWLEDGEMENTS

I would like to thanks Val Attenbrow for her help with identifying some of the less common shells and for discussing some of the results with me. Mary Casey provided information about the archaeology of the site. Rebecca Griffin helped with coding the shell data.

8.0 BIBLIOGRAPHY

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Table 1. Conservatorium. Total number of shell fragments from each context.

Context	Total	Context Name	Area	Phase Number	Phase Name
1004	556	Alluvial deposit - dark grey	VH	3.1	Stables construction
603-611	423	Cistern	B	5	c.1860s?
1005	340	Alluvial deposit - yellow sand	VH	3.1	Stables construction
901-974	109	Fill	West	4.2	Garden Beds 1845-c1894
1034	56	Deposit - ash layer	VH	3.1	Stables construction
850	37	Rubbish dump	Rlwy	5	late 19th to 20th
1027	33	Deposit	VH	3	Post-Bakehouse/Stables construction
1029	29	Deposit – black ash	VH	3.1	Site clearing
876	20	Deposit - general number initially given for black deposit	West	4.2	
719	16	Fill - rubbish dump	C	5?	pre- 1917
646	13	Deposit - redeposited red sand	A	7?	Fill – slope 3
1046	7	Deposit - rubble	VH		
874	6	Deposit - mixed fill underneath footpath – unstratified	West		US
1025	5	Deposit	VH	3.2	
671	4	Deposit - rubbish fill deposit to change slope in middle part of slope = 646	B,H		5/6?
1001	4	Deposit	VH	3.1?	
623	2	A1 Horizon	C	3.1	c1821 - Fill stage 1
601	1	General unstratified - imported into site, sample of diagnostics kept.	A,B,C	6	20th century - 1917
657	1	Deposit – black silty sand	A	3.1	c1821 - Fill stage 1
668	1	Cut - not excavated - problem	B	?	?
1011	1	Fill in well 1007	VH	5/6?	?
1028	1	Deposit - yellow clayey sand	VH	3.1	
1038	1	Post packing of 1035	VH	2?	Probably pre-Stables?
1045	1	Deposit - disturbance	VH	6	Con. construction c 1913
1051	1	Deposit - sand	VH	3?	Stables construction?
1053	1	Deposit	VH	6	Con. construction c1913
Total	**1669**				

Table 2. Conservatorium. Total shell fragments by Phase.

Phase	Total Shell Fragments	Contexts (No. of Frags)
Unstratified	14	668 (1), 874 (6), 1046 (7)
Phase 2	1	1038 (1)
Phase 3	972	623 (2), 657 (1) 1001 (4), 1004 (556), 1005 (340), 1027 (33), 1025 (5), 1028 (1), 1029 (29), 1051 (1)
Phase 4	0	
Phase 5	602	603-611 (423), 719 (16), 850 (37) 876 (20), 901-974 (109)
Phase 5/6	18	646 (13), 671 (4), 1011 (1)
Phase 6	59	601 (1), 1034 (56), 1045 (1), 1053 (1)
Total	**1669**	

Table 3. List of all shells identified at the Conservatorium of Music site.

Common Name	Scientific Name	Environment	1004	1005	603-611	901-974
Periwinkle	Family Littorinidae	Rock Platform	✔		✔	
Triton	*Cabestana spengleri*	Rock Platform		✔		
Common Edible Mussel	*Mytilus edulis planulatus*	Rock Platform				
Club Mud Whelk	*Pyrazus ebeninus*	Estuarine		✔	✔	✔
Mud Oyster	*Ostrea angasi*	Estuarine	✔	✔	✔	
Southern Mud Whelk	*Velacumantus australis*	Estuarine			✔	
Sydney Cockle, Mud Ark	*Anadara trapezia*	Estuarine	✔	✔	✔	✔
Auger Shell	Family Terebridae	Sand near Reefs				✔
Hard Coral (Not Further Id.)		Reef				✔
Sand Snail (Not Further Id.)	Family Naticidae	Sand/Estuary			✔	
Stromb or Spider Shell	Family Strombidae	Sandy				✔
Venus Shell	Family Veneridae	Sandy		✔	✔	✔
Abalone	Family Haliotidae	Varied			✔	
Cowrie (Not Further Id.)	Family Cypraeidae	Varied		✔		✔
Oyster (Not Further Id.)		Varied	✔	✔	✔	
Rock Oyster	*Saccostrea cucullata*	Varied	✔	✔	✔	✔
Scallop	Family Pectinidae	Varied				
Unidentified Gastropod		Unknown				✔
Unidentified Bivalve		Unknown			✔	
Unidentified Shell		Unknown			✔	
Unknown Bivalve (Type G)		Unknown				
Unknown Bivalve (Type H)	Family Trigoniidae??	Unknown				
Unknown Bivalve (Type I)	*Circe scripta?*	Unknown				
Unknown Gastropod (Type A)		Unknown			✔	
Unknown Gastropod (Type B)		Unknown			✔	
Unknown Gastropod (Type C)		Unknown			✔	
Unknown Gastropod (Type D)		Unknown			✔	
Unknown Gastropod (Type E)		Unknown			✔	
Unknown Gastropod (Type F)		Unknown			✔	
Land Snail (Not Further Id.)		Terrestrial			✔	
Chicken Egg Shell		Terrestrial			✔	

A single fragment or specimen of each of the following types of shell occurs in the following contexts:

Common Edible Mussel (#646)
Scallop (#850)
Unidentified Bivalve Type G (#1045)
Unidentified Bivalve Type H (#719)
Unidentified Bivalve Type I (#369)

A single specimen of a shell tentatively identified as Spiny Oyster *Chama fibula* was recovered from Context #1004.

Table 4. Conservatorium. Shell fragments for Whole Site and Selected Contexts.

Common Name	Environment	1004	1005	603-611	901-974	All #
Periwinkle	Rock Platform	2	0	2	0	4
Triton	Rock Platform	0	3	0	0	5
Common Edible Mussel	Rock Platform	0	0	0	0	1
Club Mud Whelk	Estuarine	0	1	1	1	10
Mud Oyster	Estuarine	26	149	1	0	238
Southern Mud Whelk	Estuarine	0	0	2	0	2
Sydney Cockle, Mud Ark	Estuarine	7	1	15	2	36
Auger Shell	Sand near Reefs	0	0	0	1	1
Hard Coral (Not Further Id.)	Reef	0	0	0	6	6
Sand Snail (Not Further Id.)	Sand/Estuary	0	0	1	0	1
Stromb or Spider Shell	Sandy	0	0	0	1	1
Venus Shell	Sandy	0	1	1	0	5
Abalone	Varied	0	0	1	0	1
Cowrie (Not Further Id.)	Varied	0	1	0	1	4
Oyster (Not Further Id.)	Varied	31	56	2	0	100
Rock Oyster	Varied	490	128	205	97	1055
Scallop	Varied	0	0	0	0	1
Unidentified Gastropod	Unknown	0	0	0	0	2
Unidentified Bivalve	Unknown	0	0	1	0	1
Unidentified Shell	Unknown	0	0	0	0	1
Unknown Bivalve (Type G)	Unknown	0	0	0	0	1
Unknown Bivalve (Type H)	Unknown	0	0	0	0	1
Unknown Bivalve (Type I)	Unknown	0	0	0	0	1
Unknown Gastropod (Type A)	Unknown	0	0	1	0	1
Unknown Gastropod (Type B)	Unknown	0	0	1	0	1
Unknown Gastropod (Type C)	Unknown	0	0	1	0	1
Unknown Gastropod (Type D)	Unknown	0	0	1	0	1
Unknown Gastropod (Type E)	Unknown	0	0	1	0	1
Unknown Gastropod (Type F)	Unknown	0	0	1	0	1
Chicken Egg Shell	Terrestrial	0	0	185	0	185
Total		**556**	**340**	**423**	**109**	**1669**

APPENDIX A: SHELL CODING SYSTEM USED FOR THE CATALOGUE

Description of Shell Recording Codes

Area	See excavation report
Context No.	See excavation report
Spit	See excavation report
Square	See excavation report
Number	Number of fragments
Shell Type	Taxon (e.g. Family, Genus, Species)
Shell Wt (g)	Weight in grammes
Fragmentation	Percentage of whole shell preserved
Condition	Burnt, eroded etc
Comments	Any other relevant information

Shell Fragmentation

Code	Fragmentation
W	90-100% complete gastropod
V	90-100% complete half valve
H	50%-90% complete
F	<50% complete
T	small fragment <10% complete
A	articulating half valves from same specimen

Shell Condition

Code	Condition
B	Burned
E	Eroded
VSWP	Very small, well-preserved
JT	Joined together

Shell Type

Code	Common Name	Scientific Name	Environment
AnTr	Sydney Cockle, Mud Ark	*Anadara trapezia*	Estuarine
PyEb	Club Mud Whelk	*Pyrazus ebeninus*	Estuarine
VeAu	Southern Mud Whelk	*Velacumantus australis*	Estuarine
OsAn	Mud Oyster	*Ostrea angasi*	Estuarine
SaCu	Rock Oyster	*Saccostrea cucullata*	Varied
MyEd	Common Edible Mussel	*Mytilus edulis planulatus*	Rock Platform
ThOr	Cartrut Shell	*Thais orbita*	Rock platform
TuTo	Large Common Turban Shell	*Turbo torquatus*	Rock platform
CaSp	Triton	*Cabestana spengleri*	Rock platform
DoDe	Pipi	*Donax deltoides*	Sandy Shores
AuCo	Ribbed Top Shell	*Austrocochlea constricta*	Rock platform
FaTr	Top Shell (Not Further Id.)	Family Trochidae	Rock platform
NeAt	Black Nerite	*Nerita atramentosa*	Rock platform
PoDi	Sand Snail	*Polinices didymus*	Sand/ Estuary
FaNa	Sand Snail (Not Further Id.)	Family Naticidae	Sand/Estuary
FaCy	Cowrie (Not Further Id.)	Family Cypraeidae	Varied
CyCa	Cowrie	*Cypraea caputserpentis*	Varied
FuSp	Cockle (Not Further Id.)	*Fulvia sp.*	Sand
UnBi	Unidentified Bivalve		
UnSh	Unidentified Shell		
OyNo	Oyster (Not Further Id.)		Varied
Coral	Hard Coral (Not Further Id.)		Varied
Snail	Land Snail (Not Further Id.)		
AuSp	A. constricta or concamerata	*A. constricta or concamerata*	Rock Platform
FaSt	Stromb or Spider Shell	Family Strombidae	Sandy Shores
FaTe	Auger Shell	Family Terebridae	
FaPe	Scallop	Family Pectinidae	Varied
FaLi	Periwinkle	Family Littorinidae	Rock Platform
FaHa	Abalone	Family Haliotidae	Varied