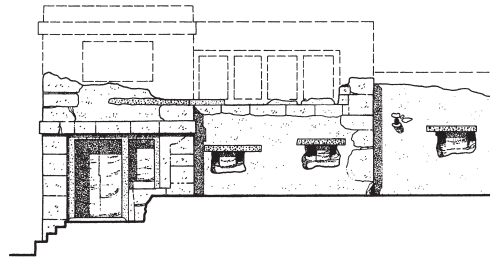


# Akrotiri Thera

An Architecture of Affluence  
3,500 Years Old



PREHISTORY MONOGRAPHS 15

# Akrotiri Thera

## An Architecture of Affluence 3,500 Years Old

by  
Clairy Palyvou



*Published by*  
INSTAP Academic Press  
Philadelphia, Pennsylvania  
2005

**Design and Production**  
INSTAP Academic Press

**Printing**  
CRWGraphics, Pennsauken, New Jersey

**Binding**  
Hoster Bindery, Inc., Philadelphia, Pennsylvania

Library of Congress Cataloging-in-Publication Data

Palyvou, Klaira.

Akrotiri Thera: an architecture of affluence 3,500 years old / by Clairry Palyvou.

p. cm. — (Prehistory monographs ; 15)

Includes bibliographical references and index.

ISBN 1-931534-14-4 (hardcover : alk. paper)

1. Architecture, Minoan—Greece—Akroterion. 2. Architecture, Domestic—Greece—Akroterion. 3. Akroterion (Greece)—Antiquities. I.

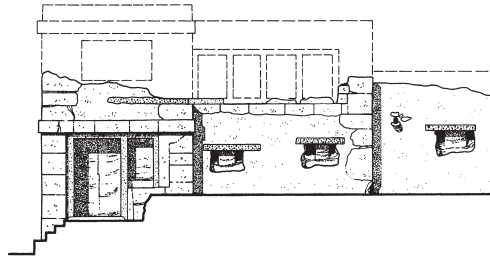
Title. II. Series.

NA267.P37 2005

722'.61—dc22

2005014177

Copyright © 2005  
INSTAP Academic Press  
Philadelphia, Pennsylvania  
All rights reserved  
Printed in the United States of America

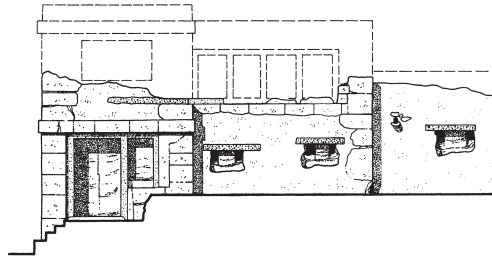


# Table of Contents

LIST OF TABLES IN THE TEXT .....	ix
LIST OF FIGURES IN THE TEXT .....	xi
LIST OF COLOR PLATES .....	xxi
PREFACE .....	xxiii
ACKNOWLEDGMENTS .....	xxvii
1. THE VOLCANIC FATE OF THERA .....	1
A Cluster of Volcanoes Gives Birth to an Island .....	1
The Late Bronze Age Eruption .....	4
Thera after the Late Bronze Age .....	6
2. THE ARCHAEOLOGIST: AN UNEXPECTED VISITOR 3,500 YEARS LATER .....	9
3. THE SETTLEMENT PATTERN OF THERA DURING THE 2ND MILLENNIUM B.C. ....	15
4. THE AKROTIRI REGION: LANDSCAPE, PAST AND PRESENT .....	19
5. THE TOWN .....	25
Layout and Public Open Spaces .....	25
Managing Water and Waste: The Public Sewage System .....	39
6. THE BUILDINGS .....	45
The West House: A Typical Theran House .....	46
Xeste 3: An Atypical Theran House .....	54
7. A GUIDED TOUR THROUGH THE TOWN .....	63
Beta-South .....	65
Beta-North .....	68
Gamma-North (Building II) .....	68
Gamma-South .....	69
Delta-South .....	71

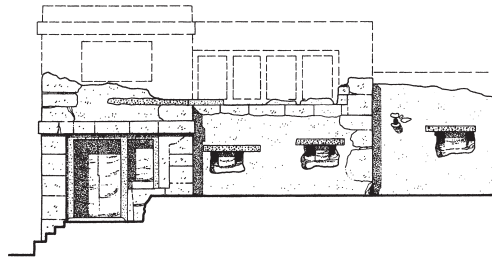
Delta-West.....	75
Delta-North (Xeste 1) .....	80
House of the Anchor.....	83
House of the Ladies .....	83
House Theta and House Zeta .....	85
Porter's Lodge and "Kitchen".....	86
Alpha-East .....	86
Alpha-West and the "Tunnel" .....	89
Xeste 5 .....	90
Delta-East .....	92
Xeste 2 .....	96
Xeste 4 .....	96
South House.....	98
8. A SYNOPSIS OF THE THERAN HOUSE MODEL.....	103
General Layout .....	103
Circulation .....	104
Functional Zones.....	106
Problems in Identifying Function.....	107
9. THE ART OF BUILDING: MATERIALS AND TECHNIQUES .....	111
Building with Stone, Wood, and Clay .....	111
Walls.....	114
Floors.....	124
Upper Floors .....	125
Ceilings .....	127
Roofs .....	128
Columns and Piers .....	130
Staircases.....	133
Doors.....	136
Windows.....	145
Interior Fittings: Shelves, Cupboards, and Built Benches.....	152
10. DESIGN AND MORPHOLOGY.....	155
A Design Process: Models and Variations.....	155
The Quantitative Aspect of Architecture: Measurements and Units .....	156
An Approximate Geometry and the Elusive Effect of Symmetry and Order .....	158
The Gridiron Pattern.....	159
Boxes, Zones, and Frames .....	160
The Wall Paintings .....	161
Concepts of Space .....	161
The Unifying Elements: Continuity and Horizontality.....	162
The Illusion Effect: Simulating Architectural Elements .....	166
The "Projection" Effect.....	167

The X-Ray Effect .....	168
The Temporal Effect of Color and Light .....	168
The Artist and the Architect .....	170
11. RECONCILING WITH THE WRATH OF ENGELADOS.....	173
An Organized Community Confronts Seismic Hazards.....	173
Earlier Seismic Activity .....	177
12. THERA AND HER NEIGHBORS IN A TIME OF OPULENCE.....	179
Ashlar Masonry .....	180
Timber Framing.....	181
The Wall Paintings .....	184
Size of Houses .....	185
Concluding Remarks .....	186
BIBLIOGRAPHY.....	191
INDEX .....	199
COLOR PLATES	



## List of Tables in the Text

1. Indicative room heights .....	128
2. Width of doors .....	140
3. Ground floor door dimensions .....	143
4. First floor door dimensions .....	143



## List of Figures in the Text

1. Map of the Aegean .....	2
2. The genesis of the Theran archipelago (Vougioukalakis 2001: fig. 2) .....	2
3. The shape of Thera before and after the “Minoan” eruption: a) after <i>Athens News</i> 2000; b) after Vougioukalakis (2001: fig. 2) .....	3
4. View of the caldera from Akrotiri .....	3
5. The eruption sequence depicted on the caldera walls (Friedrich 2000: fig. 6.8) .....	4
6. The flat eastern part of Thera (modern Kamari) was formed after the Bronze Age eruption by the accumulation of enormous quantities of ash (photo courtesy of the archive of the Deutschen Archäologischen Institut in Athens) .....	5
7. A “wall” of ash more than 10 m high borders the south coast of Thera .....	5
8. Volcanic ash sculptured by the wind .....	6
9. The eruption of the volcano in 1866 ( <i>The Illustrated London News</i> , 31 March 1866; E. Lignos Collection) .....	7
10. View of the excavation (under the shelter) and its broader region, from Mesovouna .....	10
11. Map of the Akrotiri region (Marinatos 1976: Plan A). The gray area shows the prehistoric sea level according to J. Shaw .....	11
12. Marinatos in the first years of the dig, guiding excavation under the “Tunnel” .....	12
13. Marinatos standing bewildered in front of the three-story facade of Xeste 2 .....	12
14. Delta-West at the beginning of the dig. The thick volcanic ash that is being removed is seen to the left. ....	12
15. Comparative plans of Phylakopi on Melos (Renfrew 1985: fig. 2.1), Hagia Eirene on Kea (Davis 1986: pl. 2), and Akrotiri on Thera .....	16
16. Comparative plans of Palaikastro, Crete (Bosanquet and Dawkins 1923: pl. 1) and Akrotiri, Thera ....	17
17. Map of the Akrotiri region based on aerial photos (C. Palyvou) .....	20
18. The village of Akrotiri in the early years of the 20th c. The <i>kasteli</i> (fortress) dominates at the center (photo courtesy of the archive of the Deutschen Archäologischen Institut in Athens). To the left is the hill of Mesovouna and farther back is Loumaradhes hill. The volcanic ash has been washed away from the slopes of the hills .....	20



19. View of the valley and the vineyards (Exo Chorio) to the east of modern Akrotiri. To the left the caldera cliffs are visible, while Mount Profitis Ilias and Gavrilos hill form a natural border at the far end . . . . .	21
20. Viticulture was always important for the island: grapes painted on a vase from Akrotiri. . . . .	21
21. Women from Akrotiri gather crocuses at Archangellos hill (1991, courtesy I. Tzachili) like the “Crocus Gatherers” did 3,500 years earlier . . . . .	22
22. The valley of Hagios Nikolaos seen from the north. The west harbor of the town was most probably in this area. . . . .	23
23. View from the sea of a typical Aegean town on Karpathos ( <i>Ελληνική Παραδοσιακή Αρχιτεκτονική</i> 1983–1984, 3: 77, fig. 9). The overlapping effect of the houses, due to the strong inclination of the land, produces an effect similar to that probably rendered by the Town Mosaic from the Temple Repositories at Knossos (Evans 1921–1935, I: fig. 223) . . . .	26
24. 19th c. mansions in a semi-urban style in the island community of Karterado on Thera ( <i>Ελληνική Παραδοσιακή Αρχιτεκτονική</i> 1983–1984, 2: 173, fig. 49) . . . . .	27
25. The conjectured size of the town of Akrotiri: black shows the excavated area (approximately 10 ha); dark gray shows an estimated size of 100 ha; light gray shows an estimated size of 300 ha. . . . .	27
26. General plan of the excavated area (Akrotiri archive, 1995) . . . . .	28
27. General plan of Akrotiri showing the main volumes of the buildings and the open public spaces . . . .	30
28. Theran houses according to size . . . . .	31
29. The street network and main public squares . . . . .	32
30. Telchines Street looking north. . . . .	33
31. Street south of Alpha-East with visible cobbled surface. . . . .	33
32. The indentation of the facades as a means to define the transition from a “route” to a “street”. . . .	33
33. Narrow alley by the West House serving the public sewage system, blocked by a large slab covering the sewage pit . . . . .	34
34. The darkest shaded areas indicate blind alleys that serve to illuminate the surrounding buildings . . . .	35
35. The Triangle Square looking north to the West House and east to Sector Delta. . . . .	36
36. The Triangle Square looking south to the Gate of Delta-West . . . . .	36
37. The Square of the Cenotaph. Left: Early Cycladic figurines as found in the “cenotaph”. Right: plan and section of the square . . . . .	37
38. The Square of the Double Horns. Delta-East to the left and Xeste 2 at the far back . . . . .	38
39. Women carrying water jags near a well. Detail from the Miniature Frieze of the West House . . . .	39
40. Terracotta spout . . . . .	39
41. Terracotta and stone spouts . . . . .	40
42. General plan showing known parts of the public sewage system and connections to the buildings (*). Assumed parts are indicated with a dashed line. . . . .	40
43. Exposed segment of the sewage channel running under Daktylon Street. . . . .	41
44. West House, section and isometric drawings showing the sewage pit and the junction between the lavatory installation and the public sewer. . . . .	42
45. The slabs inside the sewage pit of the West House . . . . .	42

46. West House, plans (scale 1:250) . . . . .	47
47. West House, view from southwest . . . . .	47
48. West House model, south facade . . . . .	47
49. The entrance of the West House seen under the Gate, as one approaches the Triangle Square from the sea. . . . .	47
50. West House: the south facade and the varying levels of the ground floor rooms in relation to the rock surface. . . . .	48
51. West House, section through Rooms 1, 2, 3, and 4, looking south. . . . .	48
52. West House, isometric drawing of the entrance area . . . . .	48
53. West House, section through Rooms 4 and 5, looking east . . . . .	49
54. West House, isometric drawing of Room 5, upper floor. . . . .	50
55. West House, Room 5, upper floor during excavation. The wall painting with the fisherman as found . . . . .	50
56. West House model, view from northwest. . . . .	51
57. West House model, looking east into the main staircase . . . . .	52
58. West House, Room 4 with the lavatory at the far corner . . . . .	52
59. West House, detail of the lavatory on the upper floor of Room 4a. . . . .	52
60. West House, plan and section of the lavatory. . . . .	53
61. West House, terracotta pipe stowed in Room 4, ground floor. . . . .	53
62. Xeste 3, plans (scale 1:250) . . . . .	55
63. Xeste 3: north, east, and south facades. . . . .	56
64. Xeste 3, east facade . . . . .	56
65. Xeste 3, south facade. . . . .	57
66. Xeste 3, model of the eastern part of the building (Rooms 1–5) . . . . .	57
67. Xeste 3, the ashlar wall and the bench outside the entrance . . . . .	57
68. Xeste 3, entrance to the building. . . . .	58
69. Xeste 3, the stone benches inside the entrance lobby . . . . .	58
70. Xeste 3, isometric drawing of the eastern part of the building (Rooms 1–5). . . . .	59
71. Xeste 3, the pier-and-door partition between Rooms 4 and 7, before and after restoration. On the upper floor a rubble wall corresponds to two ground floor doors . . . . .	60
72. Xeste 3, the pier-and-door partition of Room 4 . . . . .	60
73. Xeste 3, the lustral basin (or adyton) . . . . .	61
74. Xeste 3, Room 10, first floor. A built bench with embedded pithoi. . . . .	61
75. Xeste 3, Room 7, first floor, looking toward the door to Room 4 and the small window to Room 8 . . . .	62
76. Beta-South, plans (scale 1:200). . . . .	64
77. Beta-South, north and west elevations. . . . .	65

78.	Beta-South, looking east from Sector Gamma. The west facade of the building facing Telchines Street and the upper floor of room Beta 2 are visible . . . . .	66
79.	Beta-South, room Beta 2 with the central column and the pavement before the removal of the slabs . . . . .	66
80.	Beta-South, from the Square of the Mill House. The large window to the left belongs to room Beta 1, first floor (the room with the Antilopes and Boxing Children). . . . .	66
81.	Beta-South, room Beta 1a from above . . . . .	66
82.	Beta-South, the auxiliary staircase . . . . .	67
83.	Beta-South, ground floor doors leading to rooms Beta 1 and 2. . . . .	67
84.	Beta-South, room Beta 1, ground floor. Pithoi embedded in a built bench . . . . .	67
85.	Beta-South, section through rooms Beta 1 and 2. The hatched walls indicate probable modifications after the <i>seismic destruction</i> . . . . .	68
86.	Gamma-South, plans (scale 1:200) . . . . .	70
87.	Gamma-South, east elevation along Telchines Street. . . . .	70
88.	Gamma-South, the entrance door . . . . .	71
89.	Gamma-South, Rooms 4 and 4a looking north. . . . .	71
90.	Delta-South, plans (scale 1:200). . . . .	72
91.	Delta-South, the entrance . . . . .	72
92.	Delta-South, entrance lobby. Marinatos displaying the function of the mill installation . . . . .	72
93.	Delta-South, the entrance threshold. The arrow shows the traces of the timber jamb. . . . .	73
94.	Delta-South, the main staircase . . . . .	73
95.	Delta-South, west facade along Telchines Street. . . . .	73
96.	Delta-South, isometric drawing of Rooms 15 and 16. . . . .	74
97.	Delta-South, the two parallel walls between Rooms 15–16 and Rooms 10–13 . . . . .	74
98.	Delta-South, Delta 16. The earlier dividing walls cut in the rock are partly visible under the later floor . . . . .	74
99.	Delta-West, plans (scale 1:200). . . . .	76
100.	Delta-West, the entrance under the Gate . . . . .	77
101.	Delta-West, along Telchines Street, looking north toward the Gate . . . . .	77
102.	Delta-West, west facade and section through the Gate. To the left, Delta-North . . . . .	77
103.	Delta-West, the pier at ground floor level in the center of Room 1. . . . .	78
104.	Delta-West, the terrace outside Room 9.1 was formed when Room 20 was back-filled by debris following the <i>seismic destruction</i> (Rooms 2, 18, 19, and 21 belong to Delta-East) . . . . .	78
105.	View of the first floor of Delta-West, Rooms 9 and 9.1. The bases of the pier-and-door partition are visible . . . . .	79
106.	Delta-West. The bases of the pier-and-door partition joining Rooms 1 and 1a on the first floor are visible. A large pithos was found blocking one of the doors . . . . .	80
107.	Delta-North, general plans (scale 1:250) . . . . .	81

108. Delta-North, the entrance . . . . .	81
109. Delta-North, the entrance lobby and the main staircase . . . . .	82
110. Delta-North, the auxiliary staircase . . . . .	82
111. A view of the House of the Anchor (to the right) and the Gate from Triangle Square . . . . .	83
112. The House of the Ladies, general plan (scale 1:250) . . . . .	84
113. The House of the Ladies, the small window in the light well. . . . .	84
114. The House of the Ladies, Room 1, clay bins . . . . .	84
115. The House of the Ladies, Room 7 looking northwest . . . . .	85
116. Alpha-East, plans (scale 1:200) . . . . .	87
117. View of Alpha-East, ground floor rooms from the north . . . . .	87
118. Alpha-East, east elevation . . . . .	88
119. Alpha-East, Room 1. . . . .	88
120. Alpha-East, Room 2. The cupboards were made of upright clay slabs fixed in a timber frame . . . . .	88
121. Alpha-East, looking south from Room 2 . . . . .	88
122. Alpha-West, plans (scale 1:200) . . . . .	89
123. Alpha-West, the entrance in the “tunnel” area . . . . .	90
124. Xeste 5, plan (scale 1:200) . . . . .	91
125. Xeste 5, west facade looking from the Square of the Cenotaph. . . . .	91
126. Delta-East, plans (scale 1:200) . . . . .	92
127. Delta-East, east facade looking on the Square of the Double Horns. . . . .	93
128. Delta-East, east facade. . . . .	93
129. View of Delta-East, Rooms 17–19 looking east. The torrent has destroyed part of the building . . . . .	94
130. Delta-East, the room with the Spring Fresco during excavation. The gypsum cast of the bed is still in situ . . . . .	94
131. Delta-East, looking west at Room 2. The bases of the pier-and-door partition of the first floor are visible. The window to the left corresponds to Room 21 and looks out on to a blind alley. . . . .	95
132. Xeste 2, north facade (computer restoration based on an old photograph by C. Palyvou). . . . .	96
133. Xeste 2, north facade . . . . .	96
134. Xeste 4, general plan (scale 1:250) . . . . .	97
135. Xeste 4, west facade. . . . .	98
136. Xeste 4, north facade . . . . .	98
137. Xeste 4, the main staircase . . . . .	98
138. Xeste 4, the bases of the pier-and-door partition of the second floor . . . . .	98
139. South House, plan (scale 1:200). . . . .	99
140. South House, north facade. The large window of the first floor probably corresponds to a room with a central column, and the two small windows below to two small rooms . . . . .	99

141. South House, the third flight of the main staircase leading from the first floor to the middle landing. . . . .	100
142. South House, a window at the first floor of the main staircase . . . . .	100
143. South House, the pier-and-window partition of the first floor . . . . .	100
144. West House, schematic representation of the functional zones and the circulatory pattern. . . . .	105
145. The pier-and-door partition as a flexible barrier . . . . .	105
146. A Japanese screen wall (Grillo 1975: 130) . . . . .	105
147. The Archanes model of a house (Sakellarakis and Sakellarakaki 1991: fig. 36) and a similar roof shelter in Veroia, northern Greece ( <i>Ελληνική Παραδοσιακή Αρχιτεκτονική</i> 1990, 7: 83, fig. 46) . . . . .	106
148. Balconies and roofed verandas in Aegean Bronze Age art: left, wall painting from Knossos (Evans 1921–1935, II: 603, fig. 376); middle and right, detail from the Miniature Frieze, Akrotiri, Thera (based on Doulmas 1992a: 85, fig. 48 and restored by C. Palyvou) . . . . .	107
149. Informal worship within the house may not leave an archaeological trace (Nelly's, Santorini 1925–1930, D. Tsitouras Collection) . . . . .	108
150. A typical single-space house in Rhodes that accommodates a variety of functions ( <i>Ελληνική Παραδοσιακή Αρχιτεκτονική</i> 1984, 3: 197, fig. 62) . . . . .	108
151. The bed in room Delta 2 was recovered by pouring plaster of paris in the imprints left in the ash. The Spring Fresco is still hanging on the walls . . . . .	112
152. The gypsum cast of a wooden table in high relief . . . . .	112
153. Traces of quarrying in the Potamos region . . . . .	113
154. Xeste 2, the blocks of ignimbrite are badly cracked . . . . .	113
155. Bronze tools and stone hammers . . . . .	114
156. Rubble wall: large stones form the two faces, and smaller ones fill in the gaps . . . . .	115
157. Ashlar corner stones and timber reinforcement: a) South House, northwest corner; b) Beta-South, northwest corner; c) West House, northwest corner . . . . .	115
158. Xeste 4, north wall . . . . .	116
159. Slabs inserted in the wall as drip-stones is a popular technique from vernacular architecture as well. . . . .	117
160. Xeste 3, showing the chiseling on the faces of the blocks that has left clear marks. The small gap in the wall is unidentified. . . . .	117
161. Ashlar block of ignimbrite with a lime plaster border . . . . .	118
162. Xeste 4, the interstices of the ashlar wall were sealed with lime plaster, and a line was drawn over with the fingertip. . . . .	118
163. Ashlar walls in art and Xeste 4. Unidentified gaps are seen in both cases. To the left, an ivory plaque from the Royal Road area at Knossos (Hood 1971: pl. 23) and to the right, a sketch of the northeast corner of Xeste 4 (C. Palyvou). . . . .	118
164. Ashlar facades in art: a) Miniature Frieze, Akrotiri (Doulmas 1992a: 71, fig. 36); b) marble plaque from Pseira (Lebessi 1976: pl. 16); c) Plaque from Royal Road, Knossos (Hood 1971: 75, pl. 23); d) Tyllissos (Evans 1921–1935, III: fig. 49); e) Town Mosaic, Knossos (Evans 1921–1935, I: fig. 226); f) Miniature Frieze, Kea (Morgan 1990: 254, fig. 1) . . . . .	119
165. Xeste 3, Room 2. Wooden beams were fastened on the block with pegs inserted in the mortises . . . . .	119

166. Xeste 3, the lustral basin. Isometric drawing . . . . .	120
167. Mason's marks from Akrotiri. . . . .	120
168. Mason's marks on a block in situ, Xeste 4. . . . .	120
169. Mason's mark in the form of a trident from Xeste 3 . . . . .	121
170. Mudbrick walls from Alpha-East. Two mudbricks are still standing on edge . . . . .	121
171. Horizontal timber reinforcement showing typical structural details . . . . .	122
172. Sector Delta, the western exterior wall. The holes correspond to the timber reinforcement of the wall. The three holes belong to the transverse wall behind, separating rooms Delta 1 and 1a. . . . .	122
173. Xeste 3, south wall and isometric drawing of the timber frame . . . . .	123
174. Floor pavement of large orthogonal slabs (Xeste 3, Room 3, ground floor) . . . . .	124
175. Floor made of smashed shells and lime plaster (Alpha-East, Room 2) . . . . .	124
176. The structure of the floor: the main beams are spanned with twigs (their imprints are visible) followed by a thick layer of clay and the pavement slabs (Beta-South, room Beta 1) . . . . .	125
177. Wall plaster with an undulating upper edge that corresponds to the ceiling beams (Xeste 3, Room 5) . . . . .	125
178. West House, Room 5: plan of the upper floor. The corner is reinforced with diagonal beams . . . . .	126
179. The paved upper floor has subsided (Delta-West, Room 9.1) . . . . .	126
180. Terracotta slab . . . . .	127
181. The construction of a ceiling with lime plaster applied on a layer of reeds (Xeste 3) . . . . .	127
182. Fragments of lime plaster with imprints of reeds from ceilings (Xeste 3) . . . . .	128
183. Ceilings made of branches and reeds in Aegean vernacular architecture from the island of Skyros ( <i>Ελληνική Παραδοσιακή Αρχιτεκτονική</i> 1983, 1: 204, fig. 42) . . . . .	128
184. A large piece of the roof with at least 8 different layers of clay (West House) . . . . .	128
185. Details of a well preserved roof with a clay spout and projecting slabs (from an unexcavated building next to the South House) . . . . .	129
186. A thick and hard fragment of lime plaster in the form of "mosaic" from the roof of Xeste 3. The upper surface was polished, whereas the underside is rough and shows traces of its contact with clay mortar. . . . .	129
187. Columns from Akrotiri: a) diameter (upper); b) height (upper/lower); c) shaft diameter . . . . .	130
188. Column bases: a) Beta-South, Room 2; b) Gamma-South, Room 7 (?); c) Alpha-East, Room 1, ground floor and upper floor; d) West House, Room 3 . . . . .	131
189. Alpha-East, Room 1. The base of the column and its foundation . . . . .	131
190. Main staircases of Akrotiri with the model shown in black. . . . .	132
191. West House, main staircase: restored isometric drawing showing the method of construction . . . . .	133
192. West House, main staircase: view from the east. . . . .	133
193. A model of the West House: view of the main staircase . . . . .	134
194. Delta-North, the first flight of the main staircase. . . . .	134
195. Auxiliary staircases . . . . .	135

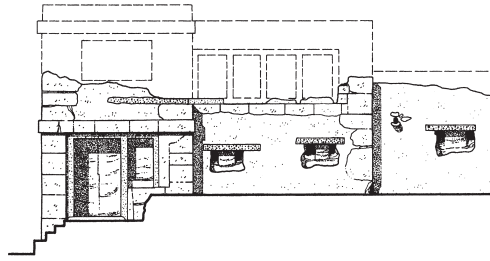
196. West House, Room 7. The auxiliary staircase, plan and section . . . . .	136
197. Beta-South, auxiliary staircase. . . . .	136
198. Entrance doors . . . . .	137
199. Restored isometric drawing of the entrance door (Delta-North). . . . .	137
200. Entrance doors: thresholds. . . . .	138
201. Delta-North, the threshold of the entrance door from the inside showing the recess for the door leaf and the pivot hole to the left. . . . .	139
202. Delta-East: the imprints of the wooden planks of the door leaf are discernible. . . . .	139
203. West House, the entrance . . . . .	139
204. West House: the entrance as found and restored . . . . .	139
205. Xeste 3: the entrance as found and restored. A beam holding the wooden pivot of the door was sunk in the floor right next to the threshold. . . . .	140
206. The imprints of the timber frame of an interior door (Delta 1a) and a door jamb cast in gypsum (Xeste 3). . . . .	141
207. Various forms of stone bases from interior doors . . . . .	141
208. Details of the timber frame of an interior door (Xeste 3, Room 7, first floor) . . . . .	141
209. Beta-North, Room Beta 1a. The lime plaster of the wall entirely covered the wooden door jamb . . . .	142
210. Pivot stones found at Akrotiri . . . . .	142
211. Traces of a double door fixed on the first step of the staircase (Delta-North, main staircase) . . . .	142
212. Pier-and-door partitions . . . . .	144
213. Xeste 3: isometric drawing of the pier-and-door partition of the ground floor connecting Rooms 4 and 7 . . . . .	145
214. Dressed stone bases of pier-and-door partitions . . . . .	145
215. A pier-and-door base. The roughly dressed part was the foundation embedded in the floor . . . .	145
216. The four types of windows at Akrotiri. . . . .	146
217. Type A windows: Xeste 3, Room 9, ground floor. . . . .	147
218. Type A windows: Beta-South. . . . .	147
219. Details from the construction of a window frame with lattice (West House, Room 5, ground floor) . . . . .	147
220. Type C window from Xeste 3, Room 8, ground floor . . . . .	148
221. Type C window from Xeste 3, Room 8, ground floor . . . . .	148
222. Alpha-East, Room A1, the window before and after restoration. . . . .	148
223. Three examples of Type D pier-and-window partitions: a) Delta-East, b) the South House, c) an unexcavated building in the area of the Porter's Lodge . . . . .	149
224. Isometric drawing of pier-and-opening partitions (West House, Room 5, first floor) . . . . .	150
225. The timber frame of the pier-and-window partition left its imprint on the volcanic ash (West House, Room 5, first floor). . . . .	150



226. Workers constructing a pier-and-window partition in Tibet, closely resembling the Aegean Bronze Age technique (© Rob Kendrick/AURORA).....	150
227. Structural details of a window frame with lattice (Xeste 3, Room 11, ground floor) .....	151
228. Imprints of the timber frame and lattice of a window (Xeste 2, first floor) that was mistaken for ashlar masonry (compare with Fig. 38) .....	151
229. Xeste 3, several structural details from the twin windows of Room 2 .....	152
230. Windows with lattices in the Archanes house model (Lebessi 1976: 19–21, figs. 5–7).....	152
231. Imprints of a wooden shelf in room Delta 2 .....	153
232. Cups and vases fallen from a shelf (West House, Room 6, first floor).....	153
233. The structural concept of crossing walls in Xeste 3 .....	156
234. <i>Modular Man</i> (Le Corbusier 1951: figs. 18 and 100) .....	156
235. Xeste 4, north facade showing the heights of the ashlar rows .....	157
236. Stairs with varying inclination values .....	158
237. The typical combination of two small windows below and a large one above in art (Town Mosaic, Evans 1921–1935, I: fig. 223) and at Akrotiri. ....	159
238. a) West House, Room 5; b) Xeste 2; c) <i>The Panel Exercise</i> (Le Corbusier 1951: 92–93, fig. 39) .....	160
239. Delta-East, showing the room with the Spring Fresco spread on three of the room's four walls. Three figures are added for scale .....	162
240. Beta-South, the Blue Monkeys. The corner of the room is ignored .....	162
241. The West House, Room 5. Eye-to-eye contact between a person standing in the room and the figures in the wall paintings .....	164
242. The House of the Ladies, Room 1. Eye-to-eye contact between a person standing in the room and the figures in the wall paintings .....	165
243. Xeste 3, restored sections through Room 3 and the lustral basin .....	165
244. Rectangles depicted on a wall painting from Xeste 3 and in stucco, Knossos (Evans 1921–1935, III: fig. 359) .....	166
245. Xeste 3, computer reconstruction of Room 3b. The vertical bands at the ends of the wall paintings simulate timber jambs .....	166
246. Xeste 4, Room 14: incisions on the wall plaster simulating timber elements .....	167
247. Model of the eastern part of Xeste 3. Light penetrates through the multiple doors and windows .....	169
248. Vases carefully stored in the corners of the room before departing (West House, Room 5, ground floor) .....	175
249. Delta-West, a large pithos was placed within the doorway of the pier-and-door partition between Rooms 1 and 1a .....	176
250. The imprint of a mat placed upright between a vase (now removed) and the wall for protection .....	176
251. The entrance to Gamma-South was blocked provisionally during the rescue operation .....	176
252. Beds placed on the debris of a ruined house to the west of Delta-South.....	177

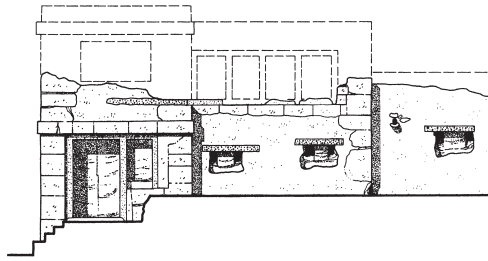


253. The Grand Staircase at Knossos: an intricate timber system carried the loads of three stories to the ground . . . . .	182
254. Rooms with central columns in Crete and Thera. Drawings of Cretan sites based on Michailidou 1986: figs. 1–18. Therasia based on Sperling 1973: fig. 20 . . . . .	183
255. The Minoan Hall in the Royal Villa, Knossos, Crete (Michailidou 1981: fig. 60) . . . . .	184
256. Xeste 3 and the Unexplored Mansion from Crete (Popham 1984: pl. 2). . . . .	185
257. The West House compared to Cretan houses at Hagia Varvara (Hood 1971: 63, fig. 31) and Malia House Da (Demargne and Gallet de Santerre 1953: pl. 63). . . . .	186



## List of Color Plates

- 1A. Hagios Nikolaos, in the Akrotiri region. The bright red rock bordered the west side of the prehistoric harbor.
- 1B. Colorful stones from the debris of a prehistoric rubble wall.
- 1C. Ashlar stones outside the excavation: red and black lava and scoriae, dark brown ignimbrite, white tuff (small fragment on the top of the pile), and dark gray volcanic slabs.
- 2A. The buildings around the Triangle Square seen from the west. Computer reconstruction by A. Kassios.
- 2B. The West House and its surroundings seen from the north. Computer reconstruction by A. Kassios.
- 2C. The West House as seen from inside the room above the Gate of house Delta-West. Computer reconstruction by A. Kassios.
- 3A. The West House, Room 5. Computer reconstruction by C. Palyvou.
- 3B. The West House, Rooms 4 and 4a. Computer reconstruction by A. Kassios.
- 4A. House Beta-South, Room B1. Computer reconstruction by C. Palyvou.
- 4B. House Delta-East, Room 2. The Spring Fresco.



## Preface

My first year at Akrotiri was 1977, when I was invited by Professor Christos Doumas who had recently taken over the direction of the excavation after the fatal accident on the site of the first excavator, Spyridon Marinatos. My duties as an architect were multifold from the beginning, but they basically revolved around two tasks: documentation drawings and restoration work.<sup>1</sup> Both of these tasks demand a thorough knowledge of the history of the specific site and its broader region. I soon found myself racing with time in an effort to learn as much as possible—in as short a time as possible—about the Aegean Bronze Age civilization. The first years were a period of informal, albeit thorough, studies in Aegean archaeology. In the field of Aegean architecture, the required knowledge had to be built piece by piece, because there was hardly any comprehensive work on the subject—and one is still lacking. Invaluable companions during this period were the pioneer works of J.W. Graham and J.W. Shaw.<sup>2</sup>

The site itself—a book in vivo—was a true revelation, and by being constantly present during the dig, I learned what no book can teach: the agonies of the archaeologists, the goals and methods of their work, and the fascinating process of interpretation that starts from the moment the spade hits the earth. I also realized the enormous responsibility of all those who work on the site. Doumas used to say “a dig is by definition an act of destruction,” and I, too, became anxious to record through my drawings as accurately as possible the “crime” I was witnessing, just as the archaeologists by my side were eager to record their point of view in the daybook.<sup>3</sup> These first drawings, like the daybooks and the photographs, will be the “eyes” to the past for future generations.

The excitement of my first visit to Xeste 4, once I realized that I was actually walking on the third floor of a building erected 3,500 years ago, has remained almost intact to this day. It only grew stronger as my eyes began to “see”—that is, to understand—the astonishing amount of architectural design involved in this building operation and the fine technical specifications guiding this work. Furthermore, the modernity of this 3,500 year-old architecture has never ceased to fascinate me. The use of timber impressed me more than anything else: the “unknown hero” as I dubbed it—unknown because so little has survived of its substance, and a hero because it carries, indeed, a large part of the loads of the edifice.

The small group of scholars that worked under the direction of Christos Doumas rapidly grew. Each new member brought his (mostly her, actually) own “dowry” to the site: yet another point of view, another expertise according to the field of specialization, and a new methodology. The time we spent together each summer was a

most fruitful, albeit tantalizing period. Our varying interests, our different goals, and different tools of thought were favorite topics of discussion during the evening hours of relaxation on the veranda of the guesthouse or on the long walks to the nearby village of Akrotiri.

A collective vision of prehistoric Akrotiri was being gradually pieced together. As I was formulating my thoughts about the bustling city and its exquisite houses, other colleagues would add to the picture: Iris Tzachili would provide the looms to manufacture the magnificent dresses described by Christina Televantou; Tania Devetzi and Antikleia Agrafiotou offered the tools, the stone vessels, and the implements to prepare the meals, for which Anayia Sarpaki, Katerina Trantalidou, and Lilian Karali could provide fascinating details; Marisa Marthari, Angelia Papagiannopoulou, and Litsa Katsa would tell us about the ceramic products of their households, and Anna Michailidou would weigh and measure their contents; Christos Boulotis would unfold the hidden messages of the magnificent wall paintings; and Peggy Sotirakopoulou would give us a glimpse of the remote past of this amazing place.<sup>4</sup> And others who later joined the group, too many to mention, would each add yet another stitch to this fascinating, colorful canvas of history. Very seldom, indeed, does an archaeological site present its story in such a vivid manner.

The laboratory for the restoration of the wall paintings was a great school. We all have immense admiration and gratitude for the restorers. Personally, I not only learned much from them, but I am deeply indebted for the undreamed gifts they offer me. Thanks to their work, I can complete many missing parts of the buildings on my drawings. The restored wall paintings of the upper floors of Xeste 3, for example, provide the “skin” of walls that have entirely collapsed. On this skin, I can read the height of the upper floor, the positions and dimensions of doors and windows, even the exact place and outline of each beam of the ceiling.

Akrotiri is a book of pictures with no captions. These captions we all strive to add, each from our own point of view, so as to arrive at a better understanding of the otherwise silent remains of a magnificent civilization. The excavation at Akrotiri—one of the most important worldwide—is a collective work led by Greek colleagues, and it will surely breed many generations of scholars to come. The work is time consuming and tantalizing but, as with every primary research, it is very rewarding. The first generation of scholars—to which I belong—has to a large degree fulfilled its mission of presenting the results of a long-term study. Many doctoral theses have been completed during the past years—though very few have been published—and numerous papers have been contributed to international conferences.

Marinatos’ annual reports, *The Excavation at Thera*, vols. I–VII, remain an important source of information regarding the individual finds and the development of the dig for the period of 1967–1974, followed by the yearly reports by Dumas in the journal *Πρακτικά της εν Αθήναις Αρχαιολογικής Εταιρείας*. Dumas’ book, *Thera, Pompeii of the Ancient World: Excavations at Akrotiri 1967–1979*, London 1983, is the only comprehensive work on Akrotiri. It is a synopsis of some of the main conclusions by the multi-disciplinary research group working under his direction. The architecture of Akrotiri is, naturally, only briefly discussed. My own doctoral dissertation, *Ακρωτήρι Θήρας: Η οικοδομική τέχνη*, Athens 1999, was published by the Archaeological Society at Athens. The book, in Greek, is a detailed account of the materials and building techniques applied at Akrotiri, but it does not include other aspects of architecture.

It was long felt that an English edition on the architecture of Akrotiri, dealing not only with the building technology, but also with issues of typology, form, and function, would be welcomed. The present book is, thus, an attempt to provide the reader with an overall picture of the architecture of Akrotiri, including an outline of its town plan, a description of the individual houses, and a discussion of its relationship with Crete and its neighbors in the Eastern Mediterranean.

The book is based on personal observations and experience obtained over a fifteen year period (1977–1992) of work at the site as the architect of the Akrotiri dig. The comparative work referring to Crete and the other Cycladic islands, on the other hand, owes much to the work of eminent scholars and excavators of Aegean Bronze Age sites. To these colleagues and friends, I am deeply indebted.

Since 1992 much has been done, especially in regard with the management of the unearthed material. Excavation, on the other hand, was rather restricted, basically in the area of Xeste 4.<sup>5</sup> Since March of 1999, the site of Akrotiri has been going through an overwhelming transformation. A new shelter is being built that will transform the excavation into an in situ museum. The one hundred or more trenches dug for the pillars of the new shelter, in the form of “rescue excavation,”<sup>6</sup> have yielded valuable information, especially regarding the earlier phases of the site. The nature of these finds, however, especially in regard to the architecture, is highly fragmentary and dispersed. Pending the study of this material, which has been undertaken by a younger generation of scholars, this book is confined to the last phase of habitation and the uniquely preserved houses that we see today.

## Preface Notes

1. Palyvou 1977; 1978; 1988.
2. Especially their fundamental works: *The Palaces of Crete* (1972) and “Minoan Architecture: Materials and Techniques,” *ASAtene* 49 (1971).
3. On the architect’s contribution to archaeology, see Palyvou 2003.
4. The reader is referred to the works of these scholars for a comprehensive view of the Thera world. A place to start would be the Thera Conferences (Doumas, ed., 1978; Hardy et al., eds., 1990) as well as Doumas, ed., 1992c and Danezis, ed., 2001.
5. Doumas 1993: 172–176; 1994: 163; 1995: 130–132; 1996: 250.
6. Doumas 2000: 34–35.



## Acknowledgments

The scientific work carried out at Akrotiri is a large scale and long-term interdisciplinary enterprise. Those who work with the material from the site, therefore, are well aware that their work is closely interrelated to the work of many others, and that in this relay-race many more will join forces. In this context I am indebted to all the colleagues working at Akrotiri, to the director and coordinator of the excavation, Prof. Christos Doumas, and to the Archaeological Society at Athens. For the past several years much copious work has been carried out in order to record and organize the diverse material from the dig. Thanks to this—and to the new technology that has invaded our archives—I acquired digital copies of almost all the photographs included in this book, with amazing speed and efficiency. For her support during this procedure, I am obliged to Tania Devetzi, heart and soul of the excavation office for many years now, and to Dimitris Sakatzis and Lucy Valassi, who helped with the preparation of the photographs.

The drawings are almost all my own, and many of them are published in my book *Ακρωτήρι Θήρας: Η οικοδομική τέχνη*, Athens 1999. There are several new drawings as well, prepared specifically for this book, such as the general plans of the site and the ground floor and first floor plans of the best-known houses. These were redrawn (and corrected many times) by architecture students, Maria Karamanou and Penelope Titoni, whom I thank for their patience. The superb three dimensional computer restorations of the West House included in the color plates were made by the architect Apostolos Kassios. They are part of his post graduate dissertation, which I supervised at the Aristotle University of Thessaloniki (2004).

Last but certainly not least, I am indebted to INSTAP for its generous support and especially to Prof. Philip Betancourt for his support, his wise advice during the preparation of the material, and his generosity in spending so much of his time to check the original manuscript and improve my English.