FORTS OF THE CHIEFTAINS:

A STUDY OF VERNACULAR, CLASSICAL, AND RENAISSANCE INFLUENCE ON DEFENSIBLE TOWN AND VILLA PLANS IN 17th-CENTURY VIRGINIA

A Thesis

Presented to

The Faculty of the Department of Anthropology

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree of

Master of Arts

---

by

Charles Thomas Hodges

2003

APPROVAL SHEET

This thesis is submitted in partial fulfillment of

the requirements for the degree of

Master of Arts

_____

Author

Approved, April 2003

_____

Norman F. Barka

_____

Marley R. Brown, III

_____

Cary Carson

DEDICATION

This thesis is dedicated to "Pinky Harrington," Leverette Gregory, Ray Sasser, Michael Burke, Michael Barber, Christy Smith, James McClure, Andrew Edwards, Antony Opperman, Virginia militia (Virginia National Guard) artilleryman John Hodges, and patrons of the arts Mary Ellen Norrisey Hodges and Elizabeth A. Hodges.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS V

LIST OF TABLES VIII

LIST OF FIGURES IX

ABSTRACT XVIII

CHAPTER 1. INTRODUCTION 2

CHAPTER 2. YEARDLEY'S FORT (44PG65) 58

CHAPTER 3. COMPARATIVE EVIDENCE AND SUMMARY 342

BIBIOGRAPHY 565

VITA 588

ACKNOWLEDGMENTS

The author wishes to express his appreciation for the many thoughtful comments and kindnesses shown by the members of my thesis committee, consisting of thesis advisor Dr. Norman F. Barka of the Department of Anthropology, the College of William and Mary, and Drs. Cary Carson and Marley R. Brown, III of the Colonial Williamsburg Foundation. These scholars displayed great patience with my first proposal and draft manuscript, and it is an understatement to say that their sound advice has done much to strengthen and improve an otherwise overly eclectic document. For the record, this thesis does not necessarily reflect the opinions of the members of the thesis committee. Rather, the thesis basks in the academic freedom generously provided by these gentlemen.

I must also thank Dr. Barka and the Department of Anthropology at the College of William and Mary for supporting my study of Christaller's "Central Places" theory in relation to early Virginia forts with a small research grant.

I would like to here blame, "Lefty" Gregory, "Pinky Harrington" National Park Service archaeologist and key founder of Historic Archaeology), Phil Evans (National Park Service, historian), and Nancy Egloff (Jamestown Settlement) for encouraging and sustaining my interest in Yeardley's Fort as something of both national and archaeological importance. Here I must also thank Dr. Lawrence Babbits (East Carolina University), Charles Fithian (Delaware State Museum), and Nicholas Brannon (Department of the Environment for Northern Ireland), for freely sharing both enthusiasm and thoughts that helped strengthen and sustain this document.

I would also like to thank the following scholars who, as mentors, have each tried to improve my research skills and provided me valuable work experience. I am grateful to Drs. Daniel Mouer, James Deetz, Marley Brown, and Cary Carson for encouraging me to go back to school and whose recommendations and on-the-job training helped me get there in the first place. I am thankful to Drs. Kathleen Bragdon and Dr. Vinson Sutlive for helping me improve my understanding of the relationship between cultural anthropology and historic archaeology; Barbra Carson for greatly improving my understanding of the discipline of material culture studies that are not purely anthropologically based; and Drs. Joanne Bowen, Barbara King, Lisa

Kealhofer, Dennis Blanton, and Dr. Donald Linebaugh for helping my sensitivity to, or critical handling of, research designs, documentary sources, the impacts of subsistence, biology, and the environment on past behavior. Special thanks are extended to Jean Bevins of the Department of Anthropology, for keeping many day-to-day things moving in the right direction.

For the use of Flowerdew Hundred material here, I owe a great debt to pioneer work by Dr. Norman Barka, Leverette ("Lefty") Gregory, Ray Sasser, James Miller, Michael Barber, Jane Townes, Andrew Edwards, and Antony Opperman. Many thanks are also extended to Dr. Barka and Mr. Gregory for helping me use or obtain unpublished field drawings and photographs of Yeardley's Fort at 44PG65. For access to additional research materials at Flowerdew, I must also thank Flowerdew Hundred Foundation staff—including especially archaeologists Dr. James Deetz, Taft Kaiser, Scott Speedy, Karen Schriver, and museum directors Thomas Young, Robert Wharton, and Libby Myrick.

For access to other unpublished materials I would like to thank the following people and organizations: for the Nansemond Fort, Jamie May, Kevin Goodrich, Nicholas Luccketti, and Dr. William Kelso of the Virginia Company Foundation; for the Jordans Journey Site, Daniel Mouer, Douglas McLearen, and Taft Kaiser of the Virginia Commonwealth University's Archaeological Research Center; and, for the Martins Hundred Site C materials, Andrew Edwards, William Pittman, and David Muracha of the Colonial Williamsburg Foundation (and Eric Klinglehoffer). During many dark moments, Ivor Noël Hume's stimulating work on Martin's Hundred reminded me that 44PG65 was an immensely important comparative site.

I would also like to thank the following libraries and librarians for facilitating my research: the curators of manuscripts and rare books at the Earl Greg Swem Library of the College of William and Mary, including Margaret Cook, Susan Riggs, Ellen Strong, and Karen McLeany, who helped me study original 16th- and 17th-century fortification field manuals; and the librarians of the Colonial Williamsburg Foundation Library, the Jamestown National Park Service, and the Alderman Library of the University of Virginia.

Special thanks must go to the entire Hodges family for putting up with school and a serious research initiative. To my spouse, Mary Ellen Hodges, I owe so many thanks that I do not know where to begin. She helped me locate obscure publications on the Susquehannock Fort site and managed to put up with endless disconnected ruminations on fortifications and Native American warfare. She also encouraged me to go back to school, and to this end kept a

roof over my head during the entire "graduate school experience." I also owe a debt to my father, Colonel (Ret.) John Hodges, for fostering my interest in military history and sharing his library, historic print collection, and often uncanny expertise on the sweep of military history and its relation to political history. I am also grateful to our landlady, my mother, Elizabeth Hodges, for recently permissive rent payments and constant encouragement.

I also wish to thank Mrs. Nancy Sheheen of PhoTech Ltd. for her able assistance in editing and formatting this thesis.

LIST OF TABLES

Title		Page
1.	Basic Predictive Models for Fortified/Courtyarded Settlements 1607–50	45
2.	Great Ordnance Dispositions In Virginia from March 1621–22 to 1626	111
3.	Non-Domestic Buildings Listed in the Muster of 1624–25, Correlated by Public Corporation	143
4.	Key Analogues Chart (Social, Spatial and Functional) For Small-Scale Variant Town\Plantation Plans	344
5.	Ulster Bawns from Pynnar's Survey 1618–19 Having Useful Descriptive Information	443

LIST OF FIGURES

Figure Page

1. The Principal features of a Roman auxiliary fort (Johnson 1983:35). 7

2. Plan of Flint, Wales: 1610 (Reps 1972:4), a good example of the Romano-Medieval plan with exclusive castle sited hierarchically over dependent community. 8

2a. (Top left) Magherafet, (Top right) Salterstown, (Bottom) Moneymore, all 1622, Ulster, Ireland (Camblin 1951:12–13). These are cheaper versions of the Romano-Medieval Plan with exclusive fortified manor sited over subordinate community.... 10

3. A page from Argan's 1969 study of the Renaissance city. Note huge Z-Plan lower left. 12

4. (Top) Philippeville, (Bottom) Marienbourg, both Belgium 1581. Note how each street leads to a bastion (outward) and into a town square and market (inward) (Reps 1972:28). Typical inclusive Romano/Renaissance Plan..... 13

5. The Bray Rossiter farm of ca. 1652–60. (Top) Conjectural Interpretation, (Bottom) Plan view based on description..... 17

6. Michelangelo's 1529 study for fortifications protecting Florence, Italy (Argan 1969:Figs. 17, 18)..... 25

7. The growth of Manila, Philippines ca. 1576–1650. Jamestown barely made it to the ca. 1576 stage (Parker 1988:Fig. 5). 28

8. The Roman Fort at Colchester (at top). Roman Fort Ad 43; grid of fort reabsorbed by town growth (Scullard 1986:52). 29

9. A. Sites before 1650 at Flowerdew Hundred and Tanks Weyanoke. B. Layout of early Flowerdew sites. C. The relationship of 44PG64 to 44PG65..... 64

10. A bordering house from a railed-in peninsula in West Africa 1665. Note musketeer (sharp angle in wall) (Lawrence 1964.) 77

11. New Netherland (New York) 1660. Note similar settlement model to Flowerdew railed-in peninsula, fort, and windmill at tip. Also note campagna, gardens (Bushman 1993:128) 79

12. Map showing the James River ca. 1614–26..... 85

13. Bermuda Island works built at Coral Block. Artillery towers and blockhouses: E. G. F, K, N, M. Forts: O. Redoubts with shore batteries: H, I, L. Cannon mounts: G (bottom), P (left), H (bottom) (Arber 1910:623–4) 103

14. Similar tactical positions to Yeardley Fort. (Top) The Great Dutch wall of 1605. Note arrow pointing to fort in tact zone. (Bottom) Lee Neck Battery on the Themes, England ca. 1588. Note arrow, the battery targets tact zone. (Top) Parker 1988:Fig. 14. (Bottom) Walker, 1981 166

15. Detail of Yeardley/Piersey complex showing feet-and-rod relationship 168

16. (Top) Yeardley's Fort, (Middle) Stone Foundation House (Piersey's Manor) (both Carson et al. 1981). (Bottom) The fortified area (Keeler 1978:174) after Barka 169

17. The 44PG64 Redoubt from Hodges 1993:Fig. 4..... 175

18. The archaeological features of the 44PF66 Redoubt (Len Winter 1982 n.d.) 177

19. The enclosed settlement 1977 before structural analysis (Barka 1993) 183

20. Yeardley's Fort with key components identified (after Hodges 1993)..... 184

21. Geometry of a bastioned fortification from Robinson 1977: Fig. 114..... 186

22. The Master Grid of Yeardley's Fort and its interpretive implications..... 188

23. Yeardley's Fort exterior polygon used as test of fort's structured analysis. Note clean angle numbers 189

24. A comparison of Late Medieval and Renaissance fire zones ... 191

25. The evolution of Yeardley's Fort. (a at top) ca. 1619–22, (b in middle) ca. fall/winter 1622–23), (c at bottom) ca. spring/winter 1623 192

26. Breakdown of the Master Plan of Yeardley's Fort ca. 1619–22 193

27. Simple forts from Ive. (Top) a flankered redoubt. (Bottom) a sconse or star fort. Yeardley cheated the plan of the top fort by 15 degrees per flank (Ive 1589:32) 194

28. Breakdown of the Master Plan of Yeardley's Fort ca. fall/winter of 1622–23. Note town square, the second phase at fort..... 197

29. Broughty Crag from the Belvoir Plans (late 16th century). Note how in this English fort, paired demi-bastions are in the process of being made into full bastions; note also non-hierarchical building (Hale 1983:Fig. 65)..... 199

30. Breakdown of Yeardley's Fort Master Plan ca. spring/summer 1623. Note structural method of calculating fort perimeter and bastions 200

31. Plan view of a quadrangular fort built in the high-style Italian 1501–02 (De La Croix 1972:Fig. 62) 202

32. Yeardley's Fort. The basic fields of defensive fire 204

33. The archaeological Master Plan. Structural analysis of just the archaeology plan. Note core tripartite plan..... 205

34. Structure 1, the Garrison House. (Top) archaeology plan, (Bottom) a plan interpretation. Lead Structure 1: barracks, quarter, or Court of Guard and Dairy Complex 215

35. Leonardo Da Vinci's Vitruvian man (Pedretti 1985) 240

36. Magherafelt 1622. Note how the Vitruvian triangle points right toward the hearth (Ramblin 1951) 244

37. Comparative drawing showing the classical proportions of Yeardley's Fort and Shirley ca. 1740. (Bottom) Reinhart et al. 1984:Fig. 17) 249

38. An overnight cavalry encampment of 1579. Note ordinal plan due to personnel discipline (from Digges 1579, reprinted 1968) 253

39. (Top) A house and garden from Lawson 1618 (Crisp 1926: CLXXXVIII), compare with Ulster model, (Bottom) a small Italian villa from Crescenzio's Agricultura 1495 (Crisp 1926: Fig. 82). Note core tripartite plan 255

40. The chateau of Bury, 16th century. Note space reserved for animals in base court (which is now expanded) (Crisp 1926: Fig. CCLXXX) 268

41. Reconstruction of the Anglo-Norman defensible grange at Newton Jerpoint, Ireland ca. 1300 a.d (From Ryan et al. 1991) 269

42. Defensive walls at Flowerdew. Figures 1 and 2, south wall west of fortified entrance. Figure 1, a 10-foot section before excavation. Figure 2, the same section after excavation. Figure 3, a section of the parade curtain east of the fortified gate. Figure 4, scale comparison with section of 44PF64 redoubt double-paled curtain 273

43. Yeardley's Fort: detail of the archaeological features at the fortified entrance. A–F, various interpretive options of which A, B, C are best 276

44. Yeardley's Fort. The exterior view of the bastard caponier interpreted as a block house ca. 1619–22 or 1622 only 277

45. Interior view of the bastard caponier ca. 1619–1622; also shows options on crossties. This drawing would suggest the site always had ramparts (?) 278

46. a. Feature group association with the front entrance. b. Caponier as seen from above. c. Ravelin showing geometric structure 280

47. Yeardley's Fort. The ravelin 1623–28+ 286

48. The ravelin and caponier shown as a single complementary unit. Inset, the unit from behind looking out at the fort south 287

49. Typical English simplification of Italian fortifications. (Top) Italian ravelin with flanking towers (Parronchi, 1982). (Bottom) Devonshire redoubt(from Arber 19102:1910 Vol. 2:625) 288

50. Fort Maurepas French, Mississippi 1699. Note the "arrowed" double-paled stockade associated with the main fort. Also arrowed are the nail lines within the bastion (Robinson 1977:Fig. 8) 290

51. Yeardley's Fort cc. 1623–1624; the entire southeast corner. (a) archaeological features identified; (b) features interpreted in plan..... 292

52. (Top) counterforts, (b) catena or "Vitruvian teeth" (shown horizontally). Venetian Edition of Vitruvius (Morgan 1926). (Bottom) A, civil bulwark with crossties (Martin from 1547 edition of Vitruvius), Martin translator 301

53. (Top) Earthwork construction cutaway. (A) foundations, (B) heavy timber uprights and piles, (C) catena, (D) earth-and-twig infill, (E) wall fascines, (F) turf lining pegged, (G) rammed clay-and-mud deck, (H) parapet and embrasures formed with gabions. (Bottom) Horizontal and vertical catena (both Pepper and Adams 1986:Figs. 47, 48) 304

54. Yeardley's fort showing how paired parapet trench stains could be interpreted with the outer stain of two being a palisade barrier or "storm posts," while the interior is a revetment. Note reuse of wall walk post as counter fort 307

55. Tilbury Fort with variation of box rampart (O'Neal 1960: Plate 22) 309

56. Yeardley's Fort: a. profile of the fort, earthen rampart with turf face shown in classical dimensions (i.e., width of rampart is the height of same); b. a more "modern" interpretation of the same remains 310

57. (Top) Profile of a rampart terreplein system. (Bottom) Individual cannon platforms criss cross sleepers with V-shaped embrasures in front of them..... 312

58. The Siege of Althona, near Hamburg, Germany 1691. Here stockade revetments with a turve or earthen "batter" poke

out above to form parapets and gun ports (Van Creveld 1989:18-D). 313

59. Detail of cross tie system and possible strut system of the south curtain west of fortified gat at Yeardley's Fort 318

60. Wall walks. (Top left) Iron- or Bronze-Age wattled wall and walk (Hoggs 1981,(Top right) medieval wall walk (Kenyon 1990), (Bottom) wall walk at Monea Castle ca. 1622 (Ryan et al. 1991) 321

61. Yeardley's Fort. The southeast flanker and its evolution 324

62. Influence of a west English longhouse seen below the headquarters building 338

63. The key analogues chart from Kruft 1984; Rowley and Wood 1982; Reinhart et al. 1984 346

64. Late medieval house types for peasants or poor (Rowley and Wood 1982:Fig. 17) 347

65. The Shirley mansion complex ca. 1740 (Reinhart et al. 1984) 347

66. Foreman's analysis of site structure at Jamestown 1607 (1610) (Forman 1938) 349

67. Sidney King's painting of James Fort 1607 (Reps 1972: Fig. 26) 353

68. James Fort in 1610; Yeardley's fort 1622–23 355

69. Three Vitruvian tripartive plans. (Top) Borcovicus Praetorium, the headquarters building of Roman fort (Johnson 1983); (Middle) Yeardley's Fort; (Bottom) James Fort (Forman 1938) 360

70. Zuniga 1 and 2, Blackwater 1, St. Augustine, Yeardley's Fort, and Redoubt from Breda Siege 366

71. Triangular forts. (Top) Fort Dorothea 1654, West Africa flankered redoubt (Lawrence 1964), (Bottom) Castello di Sazanello Triangular castle ca. 1325 outwork ravelin 15th to 16th century (Toy 1984) 369

72. The Sandgate Fort (16th century) (O'Neil 1964) 370

73. The English flanked rampart at Blackwater (Blackwater 1) which defends a ford against the Irish (Rowse 1971: Fig. 3a) 371

74. The Blackwater Fort ca. 1601 (Reps 1972) 371

75. Transformation of a triangular flankered redoubt 374

76. The battle at Zutphen in the Low Countries 1586. Note two English triangular forts on the Island (New York Public Library Prints Division) 378

77. A profile of the ca. 1607–09 James Fort curtain showing how elevated gun ports became useless to attackers 380

78. Contemporary profiles of ramparts and ditches 1649 384

79. Profile of James Fort ca. late 1610 showing modification by Anglo-Dutch troops and Sir Thomas Gates 385

80. The Tudor Guines Fort with three massive trefoil bastions; arrow points to one studied to model James Fort's southeast trefoil bulwark (O'Neil 1964:Plate 18) 387

81. Identification of the trefoil bulwarks at James Fort ca. 1610+ 388

82. The town plan of Wolstenholme Town (Hume 1982: Fig 11–2) 392

83. (Top) Wolstenholme Town layout, (Bottom) (L) Villa Badoer, (R) Villa Zen by Palladio (Thompson 1993:Fig. 88) 399

84. A comparison of Shirley and Walstenholme Town showing Vitruvian influences (Reinhart et al. 1984; Pedretti 1985: Fig. 291) 406

85. (Top) Wolstenholme Town, (Bottom) Corbin's Rest. Although both sites create a courtyard, only Wolstenholme Town references classical antiquity 422

86. (a) Structural analysis of Harwood's Fort, a working plan, (b) Hypothetical profile of fort, (c) Dead ground created at corners and internal flank curve, from Brackenberry 1988 428

87. Harwood's Fort after structural analysis. Note clean numbers of feet, angles, and rods 439

88. (Top) Drake's attack on St. Augustine ca. 1586. Note base court above trapezoid fort, showing Harwood's growth intentions. (Bottom) The fort at St. Augustine ca. 1585–93 with original core trapezoid from and similar mental template to Harwood's Fort (Chantelain 1941:Map 5) 450

89. A page from Ive's Practice of Fortification 1589:8 showing why most Virginia forts are trapezoidal since they are starting with half (dotted lines are author's insert). 452

90. Dacre Castle early 14th-century England. Note squared towers at opposite angles (Thompson 1989:Fig.11) 453

90a. Port Royal French Canada 1605. Note strong French courtyard tradition; left lower bastion similar to Hallowes; right lower similar to Harwood's Fort (Hannon 1969) 454

91. The Jordans Journey false redoubt ca. 1622–25. Note Vitruvian triangle with hierarchical Structure 5 at vertex 468

92. Detail of tripartite core plan Jordans Journey 1622–23. There are 10 points of correspondence here; arrows show possible lines of fire 471

93. Redoubts or forts with spurs. 477

94. The structure of the false redoubt at Jordans Journey with Pts. 4, 9, 8, 7, 6, 5 being the exterior polygon. 479

95. Plan of the evolution of the Nansemond Fort/Site ca. 1635–1730 (Hodges 1993:Fig.5) 485

96. Analogues for Nansemond and Yeardley's Forts 487

97. (Top) Early Norman motte-and-bailey fort. Note service "base court" to left (Toy 1984:53); (Middle) Yeardley's Fort base court to left (cattle pound) (Hodges 1993); (Bottom, Nansemond Fort base court livestock and horse corral to left (Hodges 1993)..... 489

98. Detail of core tripartite plan at the Nansemond fort. Note out-of-square building regimen 491

99. Z-Plan forts. (Top) Irish fort defended against English from painting by Richard Bartlett ca. 1590–1602 (Archives Dublin); (Bottom) a fortified pavilion in Milan designed by Leonardo Da Vinci (Pedretti 1985:67)..... 495

100. The Susquehannock fort, a flankered redoubt 1675. Note entrances next to each demi-bastion, revetment of top demi-bastion (Ferguson 1941) 504

101. A flankered redoubt from Ward 1639 (compare with the Susquehannock Fort) (Ramm et al. 1964:Fig. 176)..... 507

102. Detail of the core tripartite plan at the Clifts site. Note tight plan of quarter vs. loose outbuildings..... 511

103. The trapezoidal emergency Clifts Z-Plan fortlet compound compared with the Ulster, Ireland Skinners Company "Bawn" (Hodges 1993; after Neiman 1981, St. George 1990). 515

104. Z-Plan forts and castles and related works (Hodges 1993: Fig. 7) 519

105. A 14th-century English castle along with Mt. Vernon. Note how fortification helps prejudice social elites for Palladian symmetry. (Top, Toy, 1975) (Bottom, Morrison, 1952)..... 559

106. Sites that seem to have the strongest debt to a west English exploded long house with a hierarchical manor or headquarters building. 564

107. A plan showing staggered alternating town lots looking like a Roman fort (from a French edition of Vetruvius 1547) Jan Martin Translator..... 566

ABSTRACT

This thesis explores the extent to which the early 17th-century English "particular plantation" layout at Flowerdew Hundred (1618–32), located in Prince George County, Virginia, was influenced by patterned cognition recorded in earlier Chesapeake public corporations and contemporary town-planning models. Historical archaeology, middle-range theory, competence, site-structure analogs, and the comparative method are used to analyze the database, which then is favorably compared with the basic site structure of archaeological sites at Jordans Journey, Wolstenholme Town, James Fort, the Nansemond Fort, and Clifts.

This study determines that, through the influence of George Yeardley, who owned the plantation from 1619 through 1624, Flowerdew Hundred shares important attributes with previous public corporations in Virginia at Bermuda Hundred, Charles City, and Henrico. The presence of immense wealth and social power, a fort with publicly owned artillery, a resident corporation minister, public tobacco and storehouses, railed-in corporate cattle herds, and a complete military command system indicate that Flowerdew Hundred became the key public corporation center for Charles City and the main James River defensive center for the entire Virginia colony during the Second Anglo-Powhatan War (1622–32).

The fort and town center at Flowerdew Hundred were fully integrated through Roman, Renaissance, and Dutch influences. Within it, Yeardley took the structure of the west English longhouse and cleverly adjusted it to make an architectural statement of "humanitas," a noncommemorative reference to classical antiquity. The plan features a headquarters building and chapel in a hierarchal position over a subordinate quarter and public store. The result is a Palladian-influenced Vitruvian tripartite plan that summarizes the "civility" of a town as a defended villa.

The tripartite plan at Flowerdew is spatially and functionally comparable to the architectural core of numerous Ulster sites; Jamestown Fort, Jordan's Journey, Site C at Martin's Hundred, the Nansemond Fort at Harbor View, and Clifts plantation in the 17th-century Chesapeake; and 18th-century Virginia plantations such as Shirley and Nomini Hall. The common classical deep structure of all these units suggests that 17th-century, loosely symmetrical ordinal villa plans with staggered subordinate buildings—permissible in Renaissance conceptions of Vitruvian order—yielded to more metaphoric and rigidly symmetrical Palladian villa plans in the 18th century, allowing us to account for change in the Structuralist cognitive model of Deetz (1977).

FORTS OF THE CHIEFTAINS:

A STUDY OF VERNACULAR, CLASSICAL, AND RENAISSANCE INFLUENCE ON DEFENSIBLE TOWN AND VILLA PLANS IN 17th-CENTURY VIRGINIA

CHAPTER 1

INTRODUCTION

FORWARD

Writing of the events of 1675 to 1676 associated with Bacon's Rebellion in which rude English diplomacy resulted in retaliatory raids from the Susquehannock Indians, one William Maxwell (1850:63) wrote:

> "In these frightful times the most exposed small families withdrew into our houses of better numbers, which we fortified with pallisadoes and redoubts, neighbors in bodys joined their labors from each plantation to others alternately, taking their arms into the ffields, and setting centinels; no man stirred out of door unarm'd, Indians were (ever and anon) espied, three 4, 5, or 6, in a party lurking throughout the whole land,..."

The title of this thesis is taken from John Smith's complaint that, "few but the Cheiftanes," such as his arch-rival military commander George Yeardley, were bettered by summer relief ships sent to Virginia after the "Massacre" of spring 1622 (Arber 1910 II:595). This of course is during similar "frightful times" times Maxwell described immediately above. This thesis focuses on archaeological remains of the same or similar fortified settlements or "redoubts" found among indigenous English "chieftains" who were defending themselves from the Powhatan Chiefdom and, in one case, potential European

rivals during the second and third Anglo-Powhatan wars of 1622–32 and 1644–46 respectively, and those associated with Bacon's Rebellion involving Doeg and Susquehannock raids. Accordingly in this discourse, these study units are considered in light of vernacular influences on the organization of the settlements and their military shells as closed cultural systems.

What kinds of questions are we asking about the seats of defense of these indigenous "chieftains?" In the past at least, many scholars have compared Virginia and New England to sister settlements in Ulster, Ireland (Garvan 1951, Reps 1972, Noel Hume 1991). What intellectual allegiance do these early Virginia settlements really owe to the Ulster model? Are there indications of English civility in these works or are they just sordid fortifications? What cultural behavior lies beneath the surface manifestations of these archaeological sites?

HYPOTHESIS

The original thesis hypothesis that we test at the beginning of the study follows:

> **Some 17th-century Virginia social elites never gave up on planning ideals defined by Garvan (1951) and Reps (1972); when they had sufficient labor to express them through praxeological constraints, these elites were often compelled to reduce this plan to a simple asymmetrical tripartite—that is, classically inspired in a peculiarly English fashion. This plan origination in Roman villas, principia, and burgi, defended medieval granges and bhyrs, and Renaissance country houses and fortifications**

> **is the basis of the typical Georgian (Palladian) 18th-century plantation complex because of common needs to architecturally define an insecure small-scale social hierarchy.**

Stated in a slightly different way, which is more reflective of actual study results, our adjusted hypothesis can be read to say:

> **Had the English never settled in Ulster, not one single thing in Virginia would have changed. Both settlements were animated by larger classically and Renaissance-inspired models for both scaled downtown planning and fortification. Those in turn were deeply affected by ordinal Vitruvian plans compromised by the chain of being and enclosed in a viable and dynamic international military defensive tradition attenuated up by interceding 16th-century warfare.**

Each hypothesis has a common theme; that is, Renaissance fortification and intellectual interest in classicism cut across both Ulster and Virginia and is the much larger parent model. In the course of our study, we will demonstrate that tripartite plans have a common origin in the Vitruvian and Renaissance notion that the symmetry of man himself with a ordinal head over pairs of subordinate limbs and organs is the perceived ultimate architectural expression of and model for the civility of the English leadership. Consequently, manors—or the "head" or each building complex configuration—were sited in an architecturally sensitive central or ordinal position over secondary structures. Quarters occupied by servants and militia were placed in a precise subordinate position below manors or headquarter buildings, while buildings such as barns or storehouses

containing objects spatially submit to both quarters and manor. This layout reflects a ranking of the Elizabethan and early colonial cosmos in an identical ordinal pattern.

Militarily speaking, profound constraints forced the colonists to employ simple flankered or unflankered redoubts borrowed from both the battlefields of Europe and the last gasps of a once-viable castle-building tradition. While the Italian and Dutch works were the recognized principle models for English soldiery, it will be demonstrated that even these works, revetted with timber and braced by earth or turves, have Roman and therefore classical underpinnings. Moreover, because the European Renaissance was international in nature and expanded to the New World, the most basic model of fortification ideals is reflected among English, French, and Spanish colonial efforts. This infinitely enlarges the universe of comparisons that can be made.

Although our study group is necessarily small—because we now have actual archaeological examples for comparison purposes, rather than seeing direct parallels with Ulster models in this study—we can begin to tease apart vernacular trends between Chesapeake and Ulster examples. This is both in terms of fortification and as regional examples of reductive town planning models. At present our archaeological finds indicate that no one really wanted to build towns because of expense and the complications of social and

political interactions; instead, small organized villages or villas modeled after British military winter encampments in the Low Countries (Holland and Flanders) were preferred as inexpensive administrative centers that were subordinate to the necessary evil of a single town. We also introduce the notion that there is no significant tension between town planning and fortification planning in either the classical or Renaissance world. Moreover, we hope to demonstrate that, unlike the modern world, the regional military and political leadership were not significantly different in early Virginia.

OVERVIEW: PRIOR RESEARCH

A brief overview of the present state of anthropological and historical theory is requisite as prologue to this research. This body of material is immense; thus, focus here is on a brief sketch of what specific theoretical contributions have been made for the 17th century and the 17th-century Chesapeake that might aid research on community planning and fortification. A number of useful studies provide some background for the current study. These studies emerge from broadly based generalizing approaches by historic archaeologists and colonial historians as well as more specifically regional research initiatives provided through multi-disciplinary studies.

Town Planning Studies and their Appropriate Models For Early Virginia

The most pertinent studies that examine planning activities are those of Garvan (1951) and Reps (1972). The author has added St. George's models to these models for argument's sake.

Garvan's Town Planning Model: Classical Underpinnings

To explain the relationship between domestic architecture, national origins, and demography in colonial Connecticut, Anthony Garvan (1951) observed a complimentary relationship between early town planning and defensive fortification in Medieval England and France based on the bastide. In brief, a bastide is a defensively walled and frequently bastioned perimeter surrounding an urban community organized within a grid-plan street system. See Figure 1. Garvan observed that the late medieval bastide was ultimately based on earlier Roman models (Garvan 1951:27–29; Reps 1972:2–3)). These Roman models included military encampments or towns that were surrounded by protective walls and featured a central

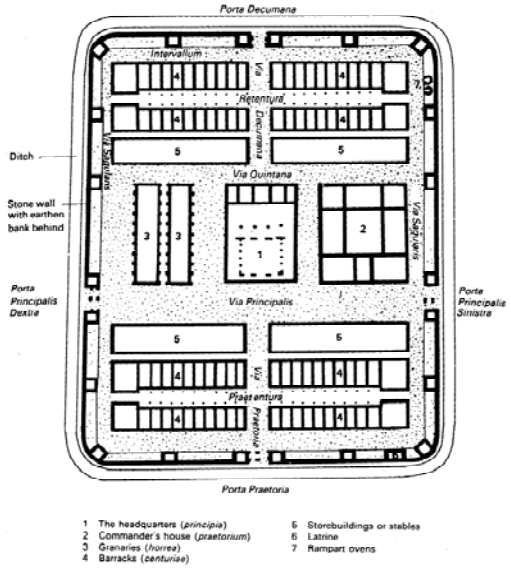


Figure 1
The principal features of a Roman auxiliary fort (Johnson 1983:35).

market place called an oppdidum.

Although much can be added to Garvan's (1951:46) seminal study, one very important contribution cannot be overestimated; that is, he observed the classical influence underpinning 17th-century town design. Roman architect and town planner Vitruvius suggested that a Roman town should be healthfully sighted and, as a matter of course, strongly walled with periodic supporting flanking towers and divided by streets that took advantage of winds (Morgan 1926:17–31).

Garvan used the masonry Flint Castle of 1604, built in Wales to illustrate themes of multiple bilinear street organization below a central castle. At Flint, a Roman-style bastide enclosing a town is situated directly below a Norman castle (Reps 1972:3–4) (see Figure 2). However, the actual context of the arrangement is more complex than he allows.

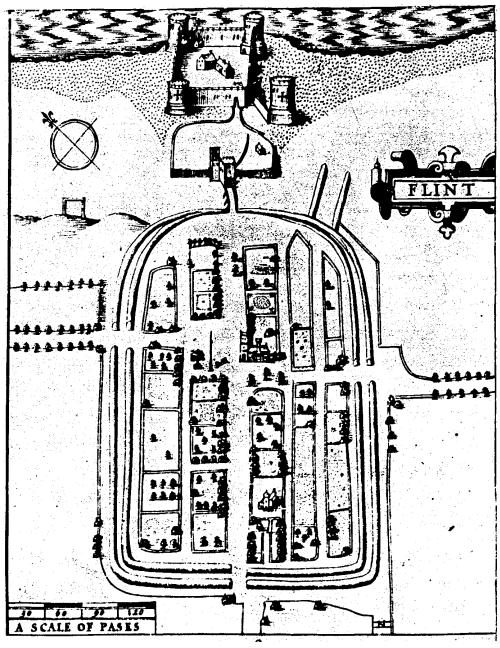


Figure 2
Plan of Flint, Wales: 1610 (Reps 1972:4), a good example of the Romano-Medieval plan with exclusive castle sited hierarchically over dependent community.

The castle was originally built in timber between 1277 and 1280 with earthen rampart walks. After 1300 it was turned into a rot- and fireproof masonry work with a supporting

church, market place, square, and bilinear streets. Only then was it possible to lure indigenous Welsh and civil English to this increasingly urban and commercial place of security. Before this, the castle itself had its own appended courtyard or "bailey," which grew to include an inner and outer bailey. The inner bailey functioned as the original town center until later when the outer bailey became the focal point. Both of the baileys probably continued as service units to the castle rather than to the town as the bastide grew. Both defensive units initially served as an ethnically restricted infant town centers and administrative seats (Thompson 1975:181, 182, 249; Toy 1955:155,170).

Garvan noted that many of these Roman and Anglo-Norman town-planning ideals continued to provide legitimate models to early 17th-century town planning in Ulster, Irish settlements made by the English and Protestant Scottish. Larger settlements like Londonderry, for instance, were fortified using the more pretentious Renaissance system with large arrow-shaped bastions along the city walls. However, in the Ulster plantation, the less pretentious, more poorly financed settlements appeared to follow a much simpler plan that preserved some aspects of the basic frontier pattern as in the Flint Wales example. Instead of a castle with high medieval walls, a "bawn"—typically a flanked fortified courtyard for minor elites, a defensible courtyard for smaller planters, and primarily a communal cattle pound for others—was often hierarchically sighted above bilinear groups of tenant and

servant quarters along but a single street. Examples of these systems have been recorded at Magherafelt and Macosquin during the 1622 period (Garvan 1951:28, 38, Figure 31). (See Figure 2a.)

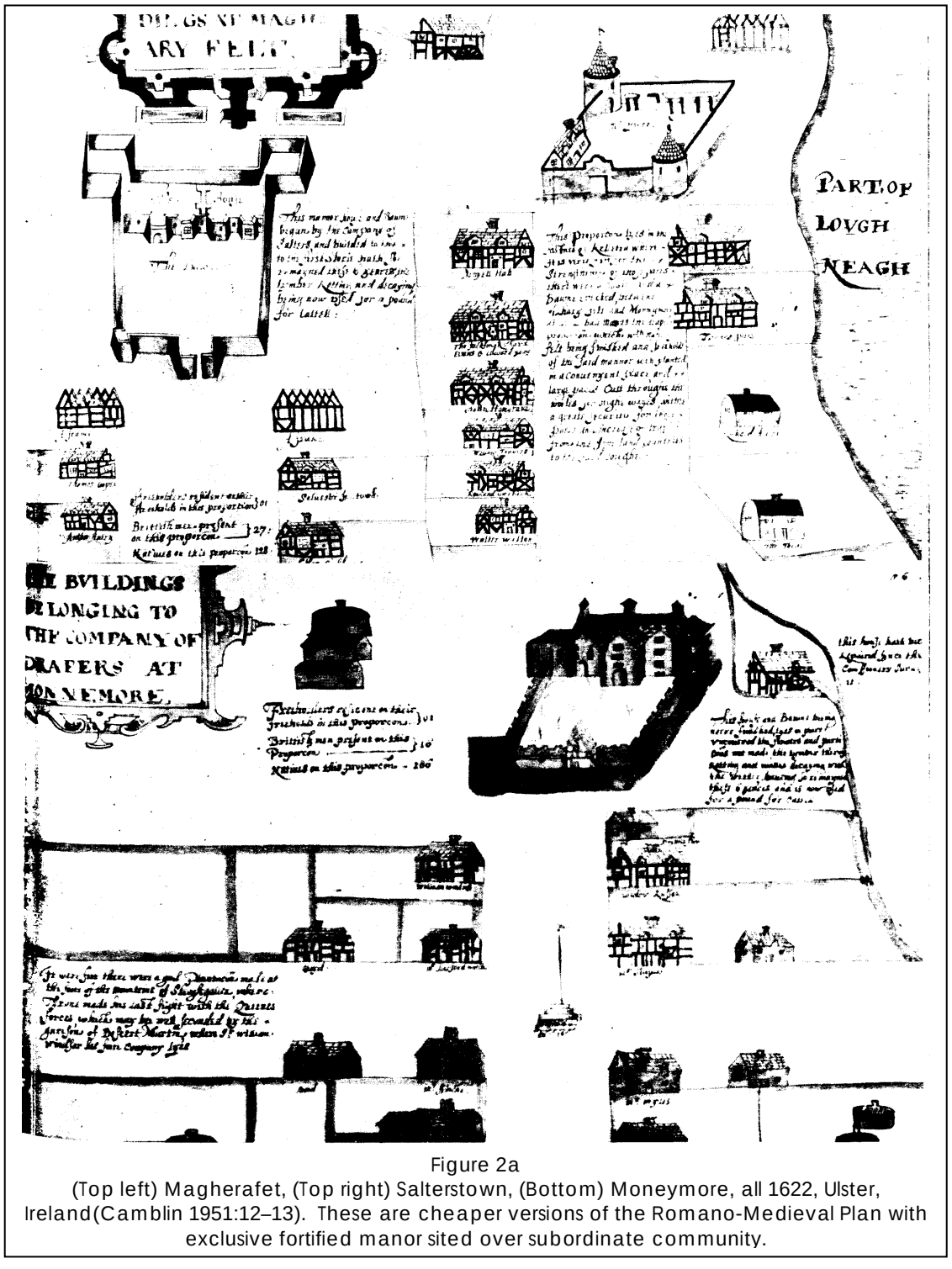


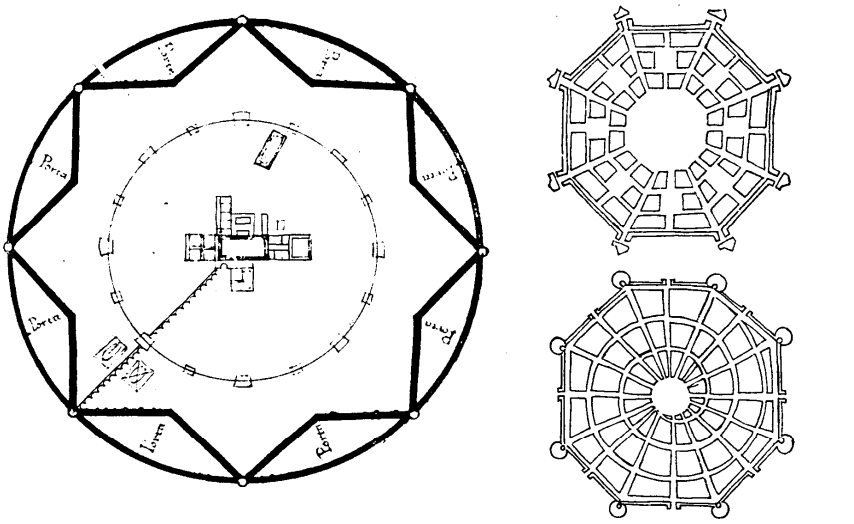
Figure 2a
(Top left) Magherafet, (Top right) Salterstown, (Bottom) Moneymore, all 1622, Ulster, Ireland(Camblin 1951:12–13). These are cheaper versions of the Romano-Medieval Plan with exclusive fortified manor sited over subordinate community.

Notably, Garvan suggested that the commercial interests of several notable investors focused attention on the Irish plantation experiment as a potential model for frontier communities in Virginia and New England. For instance, he observed that the completed version of Jamestown—with the bilinear street of New Town added opposite the fort—"closely resembled an Ulster bawn erected a short distance from the town." Moreover, he noted that James Fort's first leader was Maister Wingfield, "a soldier who had seen service in Ireland" (Garvan 1951:38–39).

Reps' Models: Renaissance Citadels and Small-Scale Plans

In his study, Tidewater Towns, Reps (1972:21–45) produced similar studies to Garvan's New England-based work for but for coastal Virginia and Maryland. Reps focused more on the Renaissance ideal city than had Garvan, although, like Garvan (1951:33–35, 47), he observed important examples of how simplification of Renaissance ideals occurred. (See Figures 3 and 4.) The new ideal Renaissance city, which was influenced by Vitruvian town orientation, was however based on rational principles influenced by Italian military engineers who sought to defend their towns based on new scientific principles of fortification (Garvan 1969:47–48). These citadels typically consisted of massive essentially circular units broken into polygons,

5. Plan of an ideal city, Sforzinda, by Filarete, 1464.
6. Plan of city on a plain, by Francesco di Giorgio Martini, 1451–1464.
7. Plan of a city on a hill, by Francesco di Giorgio Martini, 1451–1464.



8. Plan of a fortified ideal city, crossed by a river, from the *Codice Magliabecchiano*, by Francesco di Giorgio Martini, 1451–1464.
9. Plan of an ideal city, by Francesco di Giorgio Martini, 1451–1464.

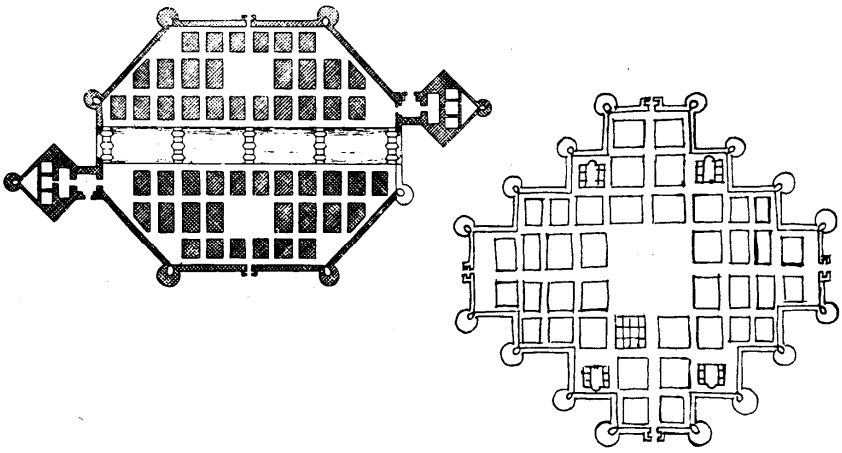


Figure 3
A page from Argan's 1969 study of the Renaissance city. Note huge Z-Plan lower left.

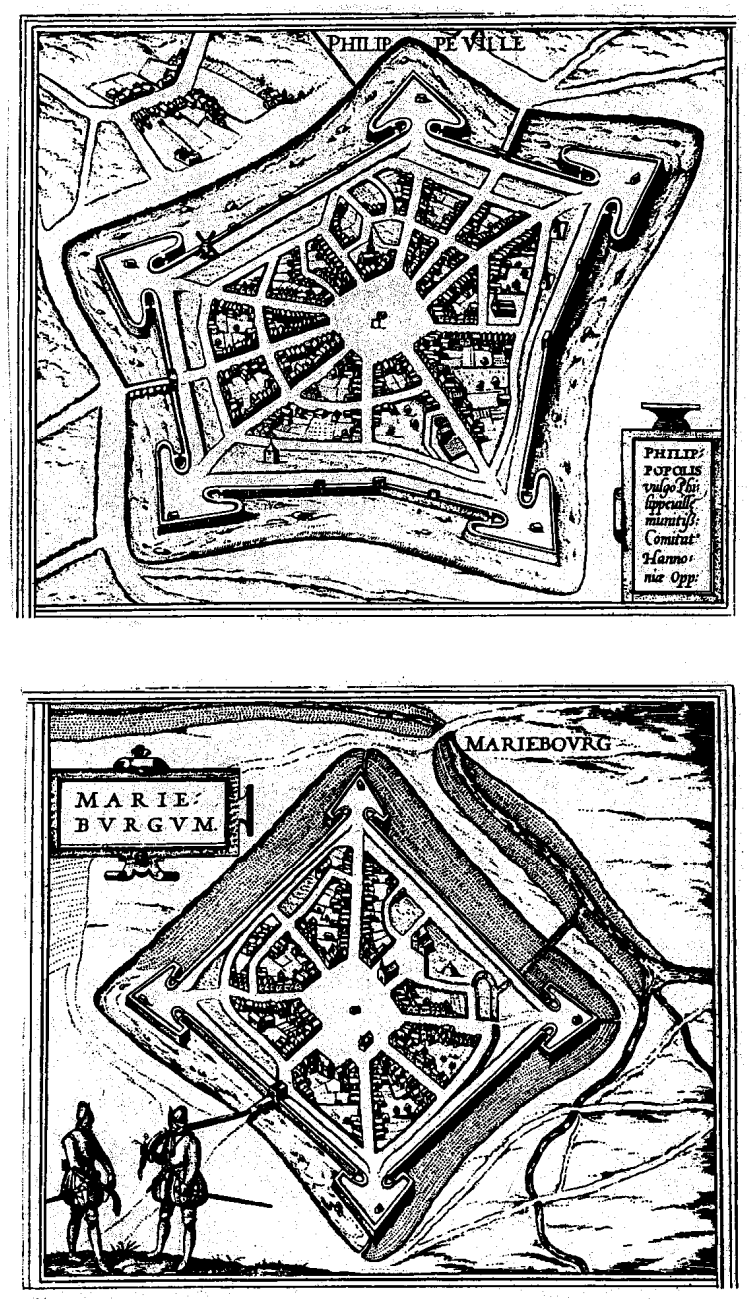


Figure 4
(Top) Philippeville, (Bottom) Marienbourg, both Belgium 1581. Note how each street leads to a bastion (outward) and into a town square and market (inward) (Reps 1972:28). Typical inclusive Romano/Renaissance Plan.

surrounded by large, arrow-shaped bastions at every angle of the exterior walls to flank attackers with crossfire between bastions. Each street radiated outward from the town center, which was occupied by a church and market place, and led to a bastion in the fashion of a wheel hub (Argan 1969: De La Croix 1972:39–55).

In some ways this spatial dynamic compliments the Norman model is seen at Flint and Magherafelt, except the fortress and the town were one in the same and the population dispersed to the surrounding defensive bastions rather than to a single point of strength such as a castle or bawn. This defense shift toward the exterior of the community is essentially a return to the Roman ideal with new adjustments for gunpowder weapons.

Reps (1972:27–31) observed that the French, Dutch, and English alike were often forced to reduce the huge Renaissance radial citadel to the more practicable pentagonal, quadrilaterals, and triangular forms. This modification reasonably satisfied Renaissance ideals, yet was less costly to construct and maintain. Reps referenced Virginia's examples of James Fort (1607–11+) and Henricus (1611–13+) (both built by ideals that superceded Ulster). As reduced to a simple bawn within smaller Ulster plantations, Reps noted they "exhibited considerable variations in their plans," with some having "linear plans" of only a single street such as Magherafelt. Regarding James Fort, he noted that, during the second phase of settlement when the

town outgrew the fort at ca. 1614, "that community must have closely resembled these linear Ulster villages" which Ralph Hamor described as "two faire rows of houses." These meager improvements later grew into "New Town" Jamestown laid out by William Clayborne in 1621.

Although Garvan does not make the similarity between Ulster bawns and medieval castles sited above rows of domiciles totally explicit, Reps (1972:2–3) observed that these settlement organizations follow the same practical rules as the late 13th-century Norman model at Flint. The main difference is that the smaller Ulster villages omit protective walls to the dependent communities along the streets as the former bastide once did. Markets were apparently planned at the terminus of each street. This system, which was more village than town-like, places most of the settlement community in a state of total dependence on the fortified manor or bawn. In all three cases at Flint, Magherafelt, and Macosquin, during times of serious threat, the outside community and livestock could be rapidly moved down the central street to gain defensive succor within the bawns at Magherafelt and Macosquin—rather than massive castle walls as at Flint Castle. Noel Hume (1983:34), who noted Macosquin as a model for Site C at Martins Hundred, calls this "the mother hen and baby chick" plan of defense.

St. George's Bawn Models: Rational and Commercial Courtyarding

In 1990, Robert St. George suggested that these bawn courtyards need not be considered as solely defensive units within frontier expansion; nor do they need to occur within the frontier. Instead, he argued that bawns—that is, the curtains or courtyard walls defining an enclosed aggregation of rural outbuildings and domestic improvements—primarily represented an efficient new way of organizing commercially based farmyards based on carefully arranged fully courtyarded planning models.

St. George used "utterances" or "reported architecture" (a contemporary verbally sketched plan) of the courtyarded Bray Rossiter farmstead of ca. 1652–60 in Guilford, Connecticut (see Figure 5), as a point of departure for his study (1990:244–256). The concepts of rationally agglomerated farmsteads affected by Roman villas models were, in modern application, first offered by Charles Estienne (an Italian born in Paris) and John Liebault's book of 1567 entitled Maison Rustique. These works were later translated into German and English, the latter through Richard Surflet's The Countrey Farme, published in 1606 at the eve of English colonial expansion. They were updated for the realities of the northern English farmstead by Gervase Markham in 1616 to avoid confusion with warm-weather crops and building orientations originally recommended by Estienne (St. George 1990:283–287).

In sum, St. George saw bawns as material expressions of new capitalist ideals, which pulled together the notions of defended farmsteads, walled towns or farmsteads, Roman villas, Renaissance ideals, and

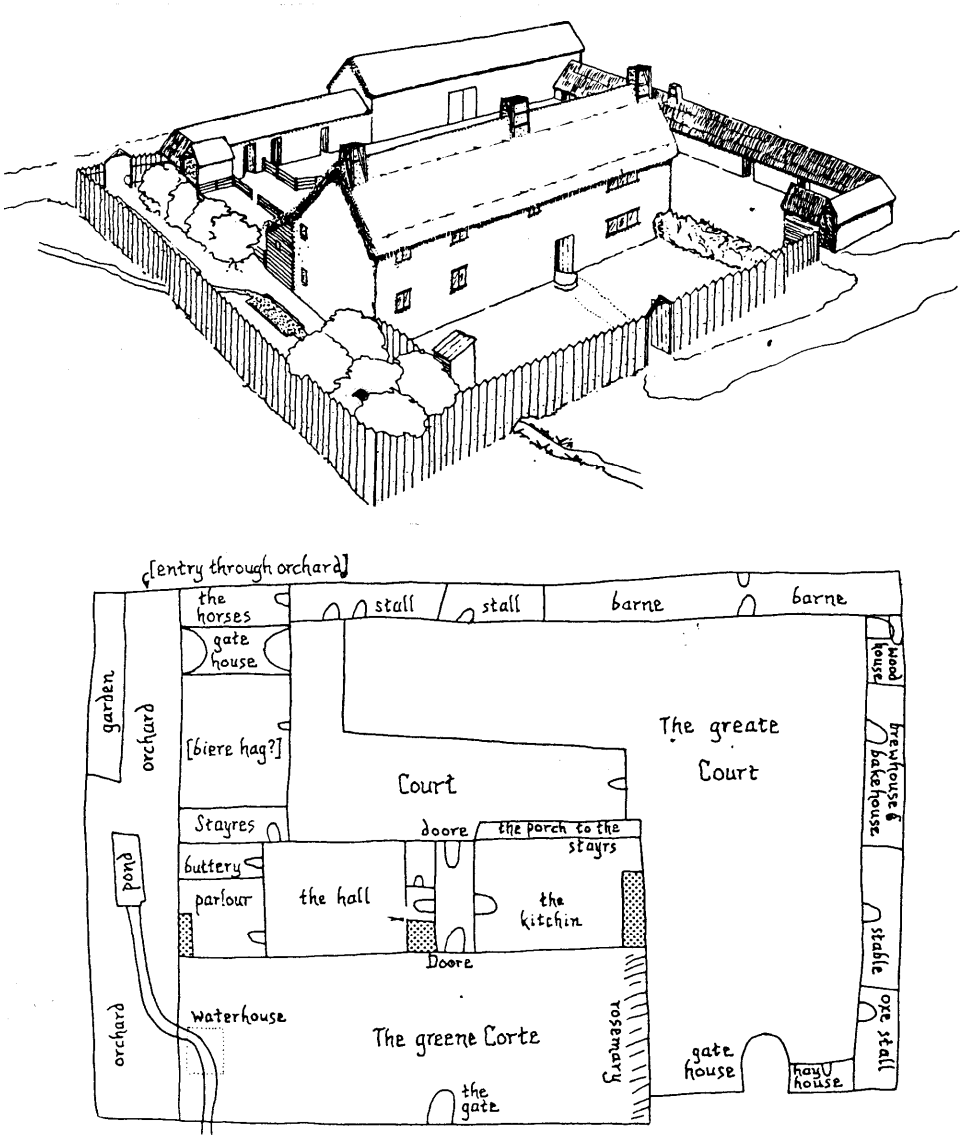


Figure 5
The Bray Rossiter farm of ca. 1652–60. (Top) Conjectural interpretation, (Bottom) Plan view based on description.

convenient commercial farming into a single complex architectural and ultimately ideological entity, hence the article title, "Bawns and Beliefs."

PERTINENT ANTHROPOLOGICAL AND MULTIDISCIPLINARY THEORY

So far we have briefly outlined what has been said regarding town- and bawn-planning ideals both regionally and internationally. It is now appropriate to shift toward what has been said regarding regional cultural behavior during the 17th century from a more generalized anthropological context. Unfortunately, the superabundance of descriptive and interpretive work on the Chesapeake pertaining to the 17th century has not been matched by major generalizing theoretical contributions emerging from regional studies. Consequently, we must turn to the more generalizing studies of James Deetz.

Deetz's Structuralist Generalizing Model

Deetz (1977) worked from a cognitive Structuralist perspective using a New England database to characterize the early 17th-century construction to about 1660 as primarily that of a conservative folk culture attempting to replicate yeoman folkways in the new world. He believed communal living and eating, closeness to nature, and an asymmetrical and organic building regimen characterized this culture. Deetz noted that at about 1660 this essentially late medieval tradition began to gradually shift toward a regional vernacular living regimen. By about 1760 this tradition shifted toward

"Georgian" based on individualism, a conscious separation from nature, and a building regimen including symmetrical housing with private and public space (Deetz 1993:70–71). The latter notions are strongly influenced by the work of Glassie (1975) who probably jumbled middle-class housing with genuine "folk" housing, as the majority of the latter dwellings in Louisa County, Virginia, were probably no longer standing.

In general, Deetz's characterizations of the early 17th century suggest the florescence of the Elizabethan and Jacobean Renaissance was but a thin or absent veneer on an essentially late Medieval "mindset" in the American colonies (Deetz 1977:39–40).

Leone and the Critical School

Another popular school based in Maryland and which has made contributions to anthropological theory in historic archaeology emerges from the Critical School. This school has tended to focus on the 18th century frequently through research initiatives associated with Annapolis. A late incarnation or outgrowth of neo-Marxism, the school generally characterizes material culture in inevitable struggles between dominant social groups and subordinate members of society while simultaneously seeking to point out cultural biases that scholars project into their work.

Admittedly Leone has offered little wisdom on the 17th century, but he has made two important studies that appear to shed light on the current

study. In a later study of the Paca Garden in 18th-century Annapolis, Leone (1988) noted that an elite townsman manipulated garden and landscape geometry to underscore his own social status over peers while simultaneously dominating and manipulating nature. He, however, makes no significant attempt to explain where this behavior came from in the past.

Architectural Studies with Social Sensitivity

Regional studies based on sensitivity to architecture and social conditions are probably Virginia's most significant contribution to theory. To understand a remarkably vigorous earthfast building tradition in the Chesapeake, which was essentially unknown before the 1970s, Carson (et al. 1981) suggested that Chesapeake planters generally placed more emphasis on manipulating land and labor than on constructing architecture, the result of which was an impermanent building tradition ideally suited to the tobacco monoculture. Carson and colleges further noted that by about 1650+ regional pressures resulted in a shift toward a relatively mature vernacular house that evolved directly from the West English pattern. Unlike Deetz, Carson (1969) noted that the parent forms of West English houses were not truly in full balance "medieval" despite strong medieval prototypes (Carson 1969; Beresford and Hurst 1971). This was the loosely framed but "sufficient" hole-set "Virginia House." Although the Virginia house appeared slightly earlier than anticipated changes in the Deetz New England model, it is essentially temporally complimentary to it.

The Chesapeake farmstead during roughly the same post-1650 period has also received some attention. Neiman (1978) has suggested that social conditions resulting from the emergence of slavery and continuous servant pressures encouraged planters to eject servants and slaves from initially communal manorial housing. This ejection resulted in a plantation complex consisting of numerous outbuildings with separate servant and slave housing as well as numerous service units. In a very brief synthetic study, Carson (1985) describes this emerging regional plantation farmstead arrangement noted by Neiman,, as characteristically amounting to a small loosely organized village in scale (Deetz 1993:77). Villages, he suggested, increasingly favored a generalized relatively open "West English" organization as opposed to the more concentrated New England regional plan. Carson eloquently described the little Virginia plantation complexes as architectural "perpetual frontiers" based on their continuing impermanence due to primary reliance on wooden earthfast building techniques (Carson 1985:55–59).

Pertinent Historical Studies

Morgan's Deterministic Model of Class and Racial Exploitation

Leone's notion of class exploitation was seemingly independently underscored by historian Edmund Morgan's landmark study of 17th-century Virginia society in American Slavery American Freedom (1975). Morgan characterized the development of that Virginia society as strongly affected by

its emerging labor-intensive tobacco economy. In a somewhat deterministic vein, he felt such pre-conditions quickly led by about 1619—and increasingly by 1660–1700—to the inevitable exploitation of laboring classes by a relatively small number of elites. That exploitation ultimately led to slavery for African-Americans so that, in effect, whites could be free.

Other Historical Studies and Military Planning Models

Roman soldier Vegetius, whose works were first translated into English in the 15th century, recommended orderly walled encampments, essentially portable walled towns, created by strongly disciplined soldiers who had to be fort- and town-building engineers as well as military fighters. He suggested that any proper town should also be fortified by either natural or man-made defenses, or, if possible, by both (Milner 1993). In fact, much that we call "Roman" ideals here were really Hellenistic and Etruscan, except as those ideals are applied to a colonial military model in the characteristically Imperial Roman approach (De la Croix 1972:21–31). Below we will not linger on any town plan pre-dating the Roman model.

A Roman "burgi" (from which Burgundy, northern France gets its name because of the proliferation of burgi there) was a small-scale fortified community typically used by the Romans to defend a spring between a city and water source along their frontiers. It appears to have first been used in

Germania, and perhaps there is Native European (Celtic and Germanic) influence in the design as well as Roman influence.

For the English at least, the medieval bastide noted by Garvan above is probably a masonry version of the less permanent Anglo-Saxon byhr which bears a striking similarity to Roman fortified camps and seems to be related to the Roman word burgi. Byhrs were fortified towns or encampments originally defended with trenches and banks surmounted with stockades and ramparts often built of turves based on a variation of the Roman model essentially described by Vegetius. It is this parent form of defense seemingly derived from the Roman fortified camp that has survived in our English language. For instance, the name Williamsburg means essentially William's fortified stronghold or fort through the German spelling of "burh" as "burg" (Thompson 1975:24–32). The first English "burgesses" who met at Jamestown in 1619 are so named based on the common root word "burg." These were the leaders of the towns/forts from which we also get the English word borough (OED 1978:I:1184, 1185).

In our modern society, military activities are seen as separate and often vulgar entities that are separate from human civility or mainstream architectural traditions. Those perceived tensions by modern scholars are late Renaissance and early modern in origin, for about 1560 is when professional military engineers and soldiers emerged as an entity with

responsibilities that did not include fort design and construction. These modern biases are not really in keeping with early Renaissance thinking of the nature of a well-rounded man—a nature that included the ability to perform as a professional engineer. For instance, the generation of archaeologists who were reared on the notion that the oxymoron of the century was the term "military intelligence" may have forgotten that the greatest artists and thinkers Europe has arguably ever produced (including the German Albrect Durer and Italian Renaissance geniuses Michelangelo and Leonardo Da Vinci) were actively cranking out fortification designs in a Europe thrown into the turmoil by the new siege cannon that could flatten virtually any medieval castle or fortified town in Europe (Argan 1969:Figs. 16, 17; Hogg 1981:101, Duffy 1979:Figs. 2, 3) (see Figure 6). These were artists whose patronage depended on being able to defend the city centers which sponsored them from the same increasingly mobile artillery and increasingly state-affiliated nationalistic armies that destroyed Constantinople and cost England all her French holdings (Duffy 1979:8–58).

Broadbeck's (1942) study of 17th-century Virginia fortifications offers little evidence that Virginia's publicly financed fortifications were anything less than "perpetual frontiers" that soon subsided back into the landscape. These military contractors' post-1650 experiments with brick revetments appear to have had little impact on the final results of forts standing for 1–3 years before falling to ruin or needing serious repairs. Fithian (1991) and

especially Hodges (1992b) attribute this phenomenon to reliance on Dutch field works models built primarily of earth and turves revetted with often green timber as a relatively poor colony attempted to solve military emergencies as they appeared.

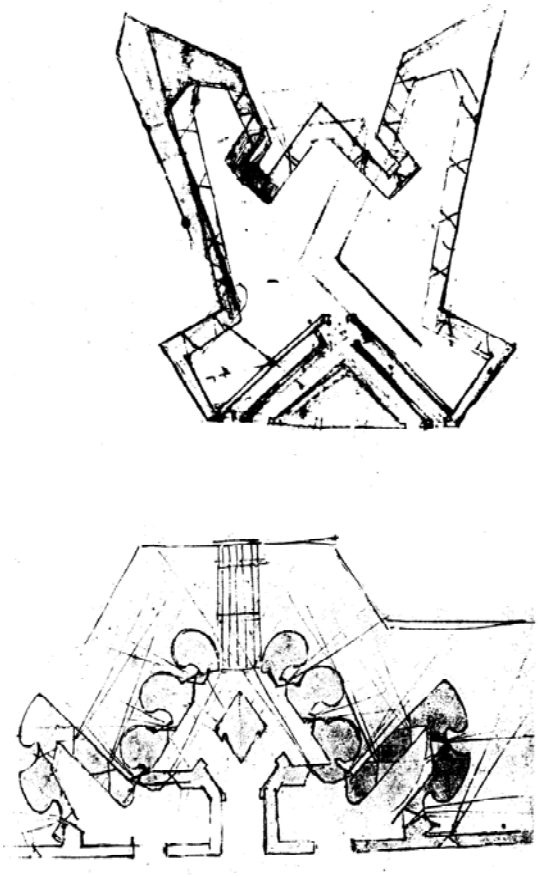


Figure 6
Michelangelo's 1529 study for fortifications protecting Florence, Italy
(Argan 1969:Figs. 17, 18).

The Elizabethan approach to war was practiced typically in Holland, where the focus was the cheapest, roughest fortifications the soldiers could erect and was meant to serve for temporary protection only. The English typically then recycled its veterans from Holland to Ulster and Virginia (Corelli 1970; Oman 1937:372–389). This rotation automatically provided Virginia with soldiers incapable of building a permanent fortress—the province of a well-financed military engineer—but who were adept at throwing together a cheap, impermanent fieldwork. This factor apparently was not remedied by later militia contractors who seemingly retained the cheap Elizabethan colonial model with the aid of various military textbooks (Hodges 1992b:2–3, 49, 51, 53–54; Kelso 1996:9–11).

Military historiography is increasingly admitting to the anthropological notion that societies tend to make wars as an extension of their cultural systems. If the myth of New England has been perpetuated as pilgrims entering America to gain religious and political freedom, Virginia can be said to be more accurately portrayed as a rather successful military entrepreneurial outpost. Rutman (1951) and to some extent Shea (1986) therefore characterized Virginia colonial leadership as militant, both by the very nature of their social backgrounds (often including Anglo-Dutch veterans of the 80 Years' War) and initial political structure in what amounts to a fairly sophisticated "military regime" (1609–18). Active wars with Native Americans whose lands and corn were variously appropriated and real or anticipated conflicts with European rivals sustained this militant frontier ideology. Shea also noted that social elites and the militia leadership were typically one in the same throughout the century, a fact seemingly independently confirmed by Fausz (1977, 1988, 1990).

Fausz's (1988:98) charts of the Virginia Council of State are bristling with military titles that were not necessarily honorific, while numerous governors and council men were actively involved in actual combat supported by an essentially Machiavellian indigenous militia system whose chauvinistic ethnic identity became a basis for both territorial conquest and Native American divestiture. More than either of the previous writers, Fausz attempts to show fundamental Native American culture, trade, warfare, and

politics in relation to the evolution and direction of the rising elites of 17th-century Virginia society. Also, like Rountree (1990), he simultaneously attempts to restore Native Americans to "the central stage they occupied in the 17th century."

The development of public works such as forts and roads cannot be separated from the economy of early Virginia. As anthropologist Chang (1977:24–4) notes, "there is a tendency for human activities to agglomerate to take advantage of scale economies" (those where the savings in costs of operation were made possible by concentrating activities at a common location). Thus, in a modern late-Renaissance frontier context, the most efficient concentration of human activities that are useful to both town planning and defense are fortifications based on town-planning ideals. Chang's assertion inadvertently argues that such notions should therefore cut across European national boundaries under the Romano/Renaissance model described below. Indeed, the early evolution of the Spanish colony of Manila in the modern Philippines from 1576 to 1650 closely parallels the evolution of James Fort (Parker 1986:124–125) (see Figure 7). In doing so, this plan simultaneously indicates just how scaled down the English "scale economy" was due to the vagaries of the tobacco monoculture. The point here is that by frequently restricting ourselves to the exaggerated importance of the "Ulster Model," we lose a host of equally appealing or more appealing international parallels to English behavior in early Virginia.

It might be useful to provide some brief examples of military leadership and classicism and their influence in the civil town planning of Virginia. Using a familiar example, the theoretical concept of the initial stages of James Fort and New Town development was simply an extension of a Vitruvian plan that was based on a single building (in this case the fort spatially acted as such) with logical extensions into an organized cluster similar to the road extension from Flint Castle to the appended settlement (Argan 1969:21). Both of the earliest street improvements related to the planning of "New Town" (as noted above under the Reps section) were made under the leadership of Sir Thomas Gates and Sir George Yeardley, both of whom were active or former members of the military regime that controlled Virginia from 1609 to 1618 (Reps 1972:27–1; Shea 1985:14–24). Roman genius fully

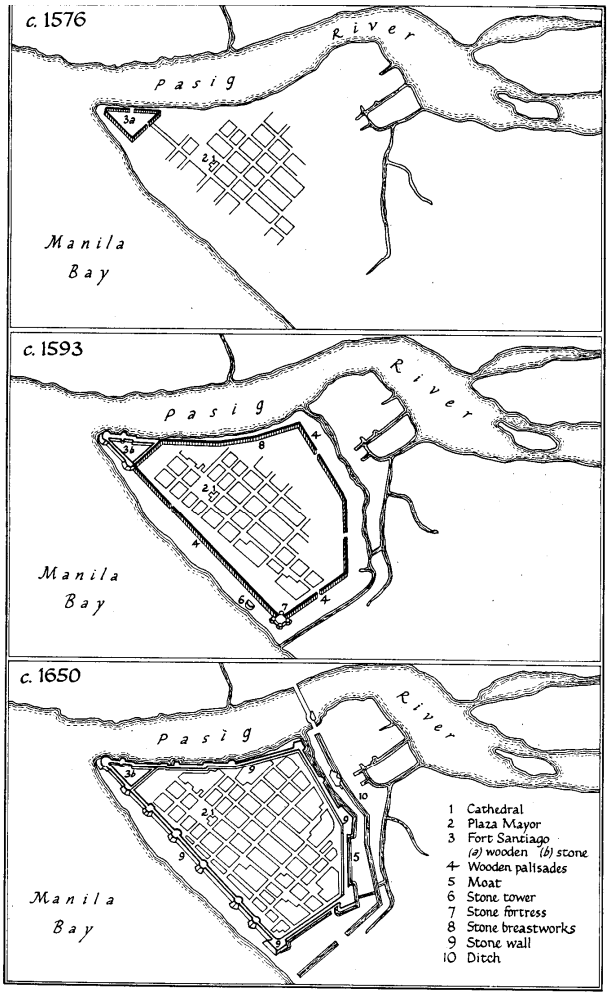


Figure 7
The growth of Manila, Philippines ca. 1576–1650. Jamestown barely made it to the ca. 1576 stage (Parker 1988:Fig. 5).

integrated military and civil improvements to maximize the commercial exploitation of captured provinces (De La Croix 1972:27,30–31). Again, the parent of model of all this is Roman, as roads such as the one bisecting New Town moved troops and commerce just as easily (Hodder and Hassall 1971:392–391). (See Figure 8.)

Notably most Roman colonial provinces were underpinned with retired or active military veterans who were given the spoils of victory, along with civilian counterparts and who in turn frequently dominated Roman political structure. Our modern English word "colony" is derived from the Roman word "coloniae," a captured territorial settlement occupied by military veterans in a commingled incentive, spoil, and retirement system (Salway 1993:395–397).

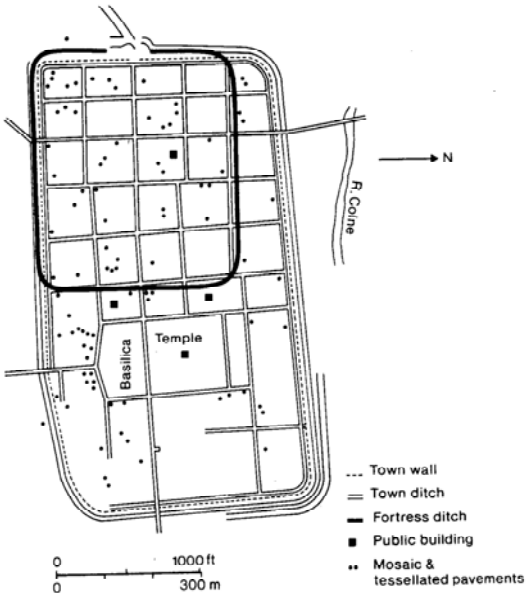


Figure 8
The Roman Fort at Colchester (at top). Roman Fort Ad 43; grid of fort reabsorbed by town growth (Scullard 1986:52).

This notion of defining an intrusive settlement working toward a territorial identity by having a fighting citizenry define its own national identity is complimentary to some of the key aspects of Machiavellian theory

(Begin 1947:38–41). Machiavelli, for instance, argued that an indigenous national army fighting for a noble political cause such as freedom was more trustworthy than was a mercenary army. This notion quickly got wrapped up in modern nationalist armies.

As we have seen, intrusive military and civil planning policies cannot be clearly separated by models developed by Garvan's (1951) or Reps' (1972) research—based on the classical model. Are not Roman soldiers equally famous for their roads as for fortifications? Seemingly, there were no contradictions between high-level civil and defensive frontier planning, as the author hopes has been conveyed above.

The Problems with Planning Theory, A Lack of Concrete Material Examples

What has been lacking in all of this research? The studies of Garvan (1951:125–126) Rep (1972:33–43), and St. George's (1990:244–256) were constrained by lack of physical material evidence of early American town or bawn design on a defensive footing as might be indicated by bastions or flankers at the angles of the courtyards. All three were compelled to variously employ contemporary drawings of courtyards devoid of military improvements or conjectural reconstructions of fortifications based on contemporary descriptions. Thus, they had no material evidence of the martial spirit behind many frontier outposts and, perhaps more importantly,

how this aspect might be reconciled with other, more domestic cultural subsystems.

Research Design

As well as being animated by the above authors, this research effort considers inferences and hypotheses developed directly from the preliminary study of "Private Fortification in 17th-Century Virginia: A Study of Six Representative Works" (Hodges 1993). The hope is that the concrete material remains discussed in that work can lead us in other fruitful directions here. In this document our prime hypothetical concern is with fortification planning in relation to site structure and how can they illustrate vernacular trends in settlement planning and practical applications of fortification that are sensitive to real regional needs. Accordingly, the overview has stressed that the grouping of common needs to organize defenses and frontier towns or plantations is at the very core of the Roman, Medieval, Renaissance, and Ulster frontier town-planning models. Their ideals we suspect—but cannot know—should appear in some systematic way in some or many Virginia frontier plantations and act as a complete functional unit that both defends and organizes a community in some reasonable fashion.

Terminology Used in This Study

Following is a brief discussion of the terminology used in this study.

Vernacular

Some variations in the use of the term "vernacular " warrant a clarification of how we will specifically use the term. Webster's Dictionary (1975:1300) notes three fairly closely related definitions to the adjective term vernacular, which is derived from the Latin term for native. Our primary interest is in the third definition; that is "of, relating to, or being the common building style of a period or place."

Fort verses Fortified or Palisaded

The terms that the colonists used to describe their fortifications are also useful for decoding function and meaning in contemporary use.

In as much as the selection process of isolating sites for this brief study revolves around the identification of forts and defensive palisades, it is profitable to also clarify how these terms are applied in the text. In modern usage the term is a somewhat imprecise noun. The Oxford English Dictionary, (1978 4:472) notes the word fort is derived from the Middle English and Middle French term "forte or fort" meaning "strong." In architectural or military usage, it denotes "a fortified place; a position fortified for protective purposes, usually surrounded with a ditch, rampart, and parapet, and garrisoned with troops: a fortress." However, those lexicographers admit that usage can include in a trading post in the United States or British Canada.

Robinson's (1977:203) definition gets to the heart of the problem: "A work established for the defense of a land or maritime frontier, of an approach to a town, or of a pass or river. Although the term originally denoted a small fortification garrisoned by troops, in North America it was used to designate virtually any establishment—civil or military—associated with protection from adversaries, regardless of whether any actual fortifications were included." Robinson's meanings are guaranteed to cause constant nomenclature problems for archaeologists, as it is a statement of fact and a problem rolled into one.

To decode the meaning of the word fort in contemporary 17th-century English usage, the English Royal Commission of Historic Monuments (Ramm et al. 1964:101) provide the following succinct definition: a "detached stronghold with provision for flank defense." The term "flank" is defined as a "length of defense facing toward adjacent defenses, from which to provide covering fire, e.g. flank of a bastion—the side linking (q.v.) face and curtain." And since the term face is closely related to the term flank, it must also be described. Face means "length of defense facing toward the field, e.g. face of a bastion—one of two sides that together form the forward angle." Thus, the term fort appears to be a word defined by fairly precise import in contemporary military usage. This is a definition that denies Robinson's loose American use of the term.

From the above, it is critically important to observe that the term "fortification," a noun describing the action of strengthening typically structurally or "fortified," is not always synonymous with the term fort despite the common root word pertaining to strength (OED 1978 4:4760477). Whereas a fort is surely a most desirable type of a fortification—provided that it can be adequately manned—a fortification is not always technically a fort. In sum, therefore, to add flank defenses and thereby create a technical fort is but one of many means of fortification, despite the common root word associated in both cases with strengthening a selected position.

Thus, for fortifications that are not flanked, we use the term "palisaded," a particular method of defensive strengthening employed in the Chesapeake and falling short of the technical definition of the word fort and perhaps related to a redoubt, which means a "retreat." Potential points of confusion may occur with the realization that a technical fort might also be palisaded and that St. George has already shown us that courtyarding can be fully civil in overall conception. "Impaled" household garden "plotts" and "penned" cattle enclosures only add to potential points of confusion to the hapless Chesapeake scholar (Crisp 1924; Keeler 1979).

Should we be concerned with precise military usage in this study if few professional military soldiers were present in the 17th-century Chesapeake? Although it is not necessarily useful to fixate on technical terms, some

rational and therefore objective standards must be inherent in a disciplined approach to the Chesapeake works. It is, alas, the only way we are able to judge 17th-century performance in relation to some definable standards of contemporary defensive usage. The presence (or absence) of flank defenses is used in this work as a measure of basic utility and sophistication in defensive design. Patterned compromises of this concept are also useful points of departure in understanding the performance of defensible works.

Professional Soldier verses Militia

As suggested above, "professional" seasoned soldiers such as Gates, Dale, and Yeardley and their companies were only in the 17th-century Chesapeake during the initial period and briefly after Bacon's Rebellion (Carson 1976:10–11). More characteristically after 1622, "militia" groups were present and led by a tiny handful of veterans; this remained essentially our national policy until 1941 despite a tiny national army after 1781. Boynton (1967) notes that in England the term militia dates only from the 16th century, although he uses it in his study of Elizabethan militia (1558–1638) to denote "unprofessional citizen forces as opposed to professional soldiers." We are reasonably certain than in every context discussed here, women, children, agricultural laborers, and simple homesteaders—along with and often identical to male militia and soldiers pressed from among the homesteaders—were present on the sites we are examining. Moreover, the professional soldier, in a modern military sense with full regular pay in an

institutional system, would only come into existence from 1645 on in England and in America from 1791 on.

In Virginia from 1622 on, militiamen were employed to defend private plantations and public forts and to attack Indians (Shea 1985). This was an exponent of Machiavelli's theory as, he suggested in 1513: that is, "no state is safe unless it has its own arms," a notion that appears to define a key factor in the American Revolution of 1776–81 (Begin 1947:41–43). In general, this militia system could potentially affect nearly every able-bodied man on a plantation during 1622–32 and, to a lesser extent as the century wore on. So for the colonial Chesapeake during the 17th century, the word professional did not yet fit the modern sense of the term.

Town verses Village verses Villa

Especially in earlier times, the words town, village, or villa differed little in meaning. Therefore, in this document, we must tune the meanings we are using for the benefit of the reader.

Town

Five pages of various often contradictory uses of the word "town" can be found in the Oxford Dictionary (OED 1978 XI:201–205)). In brief, modern usage typically means a municipality with some political authority that is larger than a village but smaller than a city (OED 1978:201). The English word town comes from old English "tun," the land forming a manor or

otherwise associated with it (ibid. 204). Thus, herein we view the term town planning as analogous to manorial planning because of this essentially older usage, which was surely current in the 17th century.

In older usage a town can be an enclosed place or simply a house or group of houses or buildings within such an enclosure (ibid. 201). This definition is frustratingly nearly identical to that of a village or villa. Because a town cannot easily be teased apart from either village or villa, we will use it to designate a special village or villa that has a minimal degree of corporate or regional political authority. This can be through borough administration or at least representation in the Virginia Assembly through burgesses. Each must be autonomous in terms of how the settlement is planned within the vagaries of multi-corporate legal restrictions. For instance, using Flowerdew examples, tenant sites along the southern road system cannot be towns because their local political authority emanates from the macro-complex at 44PG64 (Piersey's manor) and especially 44PG65—Yeardley and Piersey's Fort—but also Charles City's Borough's Fort and parish headquarters (see Hodges 1993).

As a second example, the settlers at Jordan's Journey were indeed largely autonomous during the post-Massacre period (Spring 1622), and they were represented in the Virginia Assembly. Thus, we can say they have a town. However, they may not have wanted to palisade their town, but multi-

borough legislation obliged them to do so both early and fast, apparently without authority as to how this was accomplished (Kingsbury 1906 2:381–385; McIlwaine 1924:120). So, in some ways, our defined use of the word town revolves around identification of where the actual manors were along with a commensurate identification of a burgess or higher public official residing in such special domiciles.

Village

In the Oxford Dictionary, village is a word used to signify "a collection of dwelling-houses and other buildings, forming a center of habitation in a country district; an inhabited place larger than a hamlet and smaller than a town, or having a simpler organization and administration than the latter" (OED 1978 XII:204). Because the definition of town, village, and villa can overlap, in this particular work, a village is delineated as a rural farmstead that has no clear relationship to local or regional authority either through the location of a key manorial holding or a burgess who resides inside it. So, although we can say a rural farmstead with a manor and quarter together with different outbuildings resembles a small village, for lack of a better word, it is neither a town nor a villa.

Villa

The Oxford Dictionary defines the term villa as "a country mansion or residence, together with a farm, farm buildings, or other houses attached,

built or occupied by a person of some position and wealth; a country seat or estate (OED 1978 XII:204). Only later did we begin to associate the word villa solely with an estate of demonstrative "architectural elegance" and cohesion. Villa will be used in this text to describe a single manorial seat or estate occupied by at least a burgess or other governmental figure and animated in some way by classical wisdom or Renaissance classicism. Here we are referring to classicism in basic spatial form and spirit and definitely not necessarily in elegant architectural substance such as Greek- or Roman-inspired columns or pediments. In our definition of villa, a manorial residence must be the single high-status structure present, and it must be in an ordinal or hierarchal relationship with respect to other structures. In our definition, a villa can act as a town with a certain degree of political position and autonomy.

METHODOLOGY

Now that we have defined our terms, we now focus on what specific research methods will be employed in the study.

Site-Selection Process

From the above discussion, it is rather obvious that to make such comparative analysis possible, the selection process for the study sites needs to be taken with some care. Therefore, that process is considered an important part of the research design.

Because Deetz (1993:31) suggests that only two structures represent a "compound" if the sites are also enclosed, and only one is clearly domestic in origin, evidence of at least three substantial structures—two of which are determined to be potentially domestic—appears to entitle us to use the term "settlement." These are factors present at James Fort (Forman 1938, Reps 1972). That term is embedded in the site identification of the Flowerdew site "Enclosed Settlement" to include Structure 3, along with Structures 1 and 2 (Barka 1975; 1993; Hodges 1993:188–190, Keeler 1978:174). The factor is present at Jordans Journey (Mouer et al. 1992, Mclearen and Mouer 1993) at the Harbor View Fort (Hodges 1993:200–202). Moreover, because Murdock (1949:79) defines a community as the "maximal group of persons who normally reside together in face-to-face association, we can see these sites as sealed "face-to-face settlement communities." Therefore, this regional suite of sites is chosen, as these sites offer material evidence that they contain at least two structures that have hearths or root cellars in addition to various catchment, subsistence, and service-related structures.

During the frontier period, Virginia experienced adjustments to the tobacco monoculture, which led to insular development within a plantation system. It appears likely that, in these smaller settlements, evidence of vernacular adjustments to the simplification of fortification and town planning ideals will be revealed. Further, the research of Garvan (1951) and Reps (1972) both suggest the presence of some organization in these less

pretentious settlements that amounted to a “village.” Carson's (1985) characterization of the "West English plan" as amounting to a small village will suffice here for the study of small-scale variants in plantation planning. If these are legitimate correlations with base models shown above in the Virginia frontier, then our database should be more "testable" through model development and we should be able to push our evidence beyond the level of "decorative opinion."

Another key rationale for selecting these sites is more straightforward, although of no less compelling utility to this short study. Fortifications are indications of emic choices made by frontier elites during the period 1607 to 1646. So these fortifications are emic choices, at least to the elites, of places they considered important enough to defend. Therefore, in this study we need not be overly concerned with how these sites were perceived by the illiterate majority of the occupants. These are not folk fortifications, nor were their site commanders illiterate. Next, we can ask how the cultural systems of the elites worked to embrace the less pretentious elements of society. This is not an elitist point of view, but rather the constraints of a very short study. During the period 1675 to 1676 as Maxwell (1850:63) suggests, even smaller settlers willingly "withdrew to places of better numbers" to defend communities even if within only single fortified dwellings (cf. Hodges 1993).

Finally, the ultimate appeal in the study sites is that palisades, earthworks, or partitions provide a sort of metaphoric picture frame for discrete analysis that emphatically defines the unit of study in ways that "open sites"—that is, those with undefined boundaries or site limits—do not. Courtyarded sites appear to have a deterministic quality that forces their own dynamics and constraints on interior improvements; how these forces are manipulated into order (and possibly disorder) is likely to reveal important cultural traits, thereby potentially revealing a carefully digested cultural configuration of Chesapeake society in microcosm.

Site Treatment

To make this study work, we must define the mechanism of site treatment. Each study site is treated as an artifact. Is it fair to describe a plantation, town, village, or fort as an artifact? Babitts (1980:1), who is well aware that a fortification cannot be understood without analysis of its supporting interior community and activities zones, states explicitly that we should treat fortifications and their contents just like an artifact. An artifact, like any element, requires a cultural explanation. For instance, using theoretical insights provided by Binford (1962), Leone (1977:194) in his analogous study of Mormon towns and fences noted that, "since an artifact is the product of a total cultural system, it is likely to present evidence about the perishable parts of the system that created it."

Model Development

From the previous overview, very specific predictive models of what an English fortified town or bawn may look like can be formulated primarily from work by Garvan (1951) and Reps (1972). They are also possibly affected by St. George's generalized courtyarded farmstead models (1990) in that, with the exception of James Fort, most settlements in our study group apparently were also working plantations during fortification.

A three-part summary model for the Romano/Medieval (Garvan 1951, Reps 1972), Renaissance (Reps 1972), and Civil Courtyard model (St. George 1990) with small-scale variants is listed below (see Table 1). As the two larger base models are more closely related to town rather than village levels of planning activity, each column of the table has been amended to include several "small-scale variants." These are derived directly from the base models, but are almost certainly closer to the raw edge of what could realistically be done in early frontier conditions.

Our research design anticipates that there should be some attributes or variables shared by our study group that will fall into one or more of the categories shown in Table 1. Table 1 therefore serves as a key component in our "descriptive grid" in a useful application of mid-range theory (Leone and Potter (1988:14). In this work we will follow the advice of Watson (et al. 1984:192) to call a variable "a type of phenomenon being measured" and an

attribute to mean "a particular state." By analogy from artifact studies, the variables herein are our basic complete models of Romano/Norman, Renaissance, or Civil Courtyard origin, whereas our attributes are modifiers such as location of streets, types of bastions, organization of building groupings, etc. Thus, the isolation of vernacular shifts from the ideal variables or areas of ambiguity will be found in the types of clustering we get out of the attributes of the study sites. Although Table 1 does not provide all the possible options, it is a manageable tool and road map for a brief study.

TABLE 1.

BASIC PREDICTIVE MODELS FOR FORTIFIED/COURTYARDED SETTLEMENTS

1607–1650

ROMANO/MEDIEVAL MODEL	ROMANO/RENAISSANCE MODEL	CIVIL COURTYARD (ROMAN VILLA MODEL?)
IDEAL MODELS		
Dependant Community Below fortification in multiple bi-linear relationship; walled bastide of unwalled.	Dependant Community Is organized parallel to radial streets on either side.	Dependant Community Farmer's (servant's) lodge is to left of gate (which is center west) and westward within courtyard. Unit must have kitchen. To right are stables for horses. Sheep-coates and swine sties are set to south with no opening except to courtyard. Barn to south near sheep and pig units Carts and ploughs near barn entrance between pig and sheep units.
Main Fortification Centered above community in triangular hierarchical relationship; bastions rounded or angled.	Main Fortification Is integral to town walls (Roman). Angled arrow-shaped bastions designed to eliminate dead ground.	Courtyard/Manor Walled security is against theft, social movement. Manor is opposite courtyard entrance in center east position.
Market Place Centered in dependant community	Market Place Centered in hub of radiating streets.	
Church In center of market, center street. Streets Span from outer town limits--to market place and church--to main fortification.	Church Centered in central market place, hub of town center. Streets Radiate out from church and market to bastions.	

TABLE 1 cont'd.

ROMANO/MEDIEVAL MODEL	ROMANO/ RENAISSANCE MODEL	CIVIL COURTYARD (ROMAN VILLA MODEL?)
SMALL-SCALE VARIANTS		
Flint, Manorial residence is in keep, community is bailey (courtyard); church is chapel in keep or bailey. Macosquin, Ulster Plan Bastioned bawn with manor is at top of street; dependent community along one street which ends at church. Magherafelt, Ulster Reality Same as Macosquin without church, thus chapel in manor?	English Military Camp Commanding Officer at center of gridded camp; each street leads to bastion or fort wall. James Fort, 1610–11 Church is dominant hierarchical unit over solder's quarters and storehouse; outer streets lead to bastions; central street leads to market and main river entrance; outer triangular dependent community determined by shape of fort (Forman 1938).	Regional Models, Housing? Predictions of post-medieval west English house as architectural/spatial model (Carson 1969); Medieval, "folk," see below (Deetz 1977). Regional Models, Farmstead? Organic, communal, asymmetry (Deetz 1977). antecedent expansive west English "plan" (Carson 1986)? Exploded west English long house (Hodges 1987, 1993).

Sources: Romano/Medieval Model from Garvan 1951 and Reps 1972; Romano/Renaissance Model from Pepper and Adams 1986 and Reps 1972; Civil Courtyard Model from St. George 1990.

Mental Template and Competence

Following from the above discussion, we therefore think that some or all of the variables noted by Garvan, Reps, and St. George were to some extent part of the anticipated "mental templates" of Virginia's elite planters and military veterans. To Deetz (1967:45), "the idea of the proper form of an object exists in the mind of the maker, and when this idea is expressed in raw material, an artifact exists." This mental template can be described as more or less identical to what material culture scholars call "competence." Glassie (1975) uses this term to refer to the artifact maker's ability to compose. The simple implication is that the designer of artifacts or fortified plantation complexes knows what is desired. This is referred to as "the minimum synchronic statement of the internalized ideals of external objects," providing structure to activities. A correlate is that <u>if</u> a design model can be isolated within our study sites, then compromises in the design become just as important—if not more so—than the model itself or the meaning of the ideal behind the design. By the same token, systematic compromises in design can potentially yield evidence of vernacular influences.

Anthropologically based Frazier Neiman (1982; 1993) warns researchers to apply rigorous scientific thinking by employing models derived from evolutionary biology to "avoid fallacious or soft-headed conclusions about complicated subjects" such as house plans when regarding their cultural significance and use (as cited in Wells 1986:3). An evolutionary

perspective may not have use in our discussion, so we will avoid an intuitive approach by looking for elements of order and disorder reflected in architectural dynamics that affect space, volume, and movement, and potential geometrical relationships (Arnheim 1977).

Because our own modern cultural or theoretical mental template may creep into our work, the best way that archaeological material remains can be said to demonstrate a mental template is by isolating specific material evidence of planning within two or more sites. Evidence of site planning can be formal or informal. Formal planning is often geometric, that is, based on precise surveying tools or clever use of similar objects based on mathematical principles. As such, formal plans should be capable of yielding identifiable spatial patterns. Formal spatial patterns within archaeological sites are available to modern identification through the tools of plane geometry, symmetry, or asymmetry, which may be demonstrated through a process of replication. Therefore, if the site plan is treated as a two-dimensional picture puzzle, geometry should be able to re-establish precise mathematically verifiable relationships between buildings and curtains or both. This should then yield objective information about what the planners were trying to do from their own mental template, although such patterns will not necessarily disclose the source of inspiration of such things in an unambiguous manner. Again, this is especially true <u>if vernacular trends are at work</u> that shift away from the Garvan, Reps, and St. George core models.

The Comparative Method

Informal planning, that is, planning that is not precisely laid out and therefore not mathematically verifiable, is more difficult to isolate objectively. Such planning, taken in isolation, must be inferred and can only yield patterns that are potentially more apparent than real. Therefore, the research design must include some type of application of the comparative method to propel potentially ambiguous information into meaningful identifications. For instance, an informal site structure can be compared with a formal site structure to search for commonality; from this comparison, inferences may be possible about what may have animated common planning activities. The comparative method—borrowed originally from the physical sciences—was used extensively by 19th-century anthropologists and, in some broader applications, has become one of the most fundamental aspects of modern anthropology. Potentially, however, it is charged with problems. For example, at its worst the comparative approach led to Boas' general questioning of 19th-century evolutionism. At its best was Morgan's analysis of language. By comparing kinship systems on a worldwide scale, he inferred the great antiquity of a few kinship systems by noting how similar the patterns were, thus identifying but a few parent systems that have not changed significantly to this day (Honigman 1976:116, 196).

In this work the comparative method is used primarily in two ways: (1) to help identify military and civil improvements by simple visual analogy

and therefore inferred similar functional and technological purpose, and (2) to contrast the Chesapeake fortifications with the high-style quadrangular fort, the military field work known as the "flankered redoubt," and the Ulster Irish Z-plan bawn. Whereas the first purpose is functional, the second helps us get at vernacular fort-building style through shifts away from the ideal to the regional plastic reality of the rough-and-tumble Virginia frontier. Thus, dependence on fairly numerous comparative illustrations is an almost unavoidable process to propel this discourse toward some fruitful results. A second benefit of this supplemental visual gazetteer of material precedents is the potential it affords the reader the opportunity to make critical judgments in a pioneering and therefore potentially fragile study.

Analogy

Much use of analogy will be employed in this study, and it is surely entangled with the comparative method described above. Analogy is a fairly frequent method of analysis employed by archaeologists (Ascher 1961). Binford (1967) argues that analogy is most useful when it is not employed in simple interpretation but rather in offering "a postulate as to the relationship between archaeological forms and their behavioral context in the part." In this study we are seeking both, for the use of analogy among fortified settlements helps in simple identification (an interpretation), and patterns among sites allow postulation about individual settlement forms and their behavioral contexts on a broader scale.

Mid-Range Theory

The only way the comparative method can lead to accurate study results is if properly contextualized through historical research (Hodder 1986). Properly placed within historic and cultural context, the site plan may be seen as a coded text cautiously read in relation to the specific events and the society at each site. Mid-range theory should therefore be useful in this study not only to evaluate in relation to our descriptive grid, but also to put this study into context. Mid-range theory was originally developed by prehistoric archaeologists to develop a more effective way of bridging a gap between mute archaeological data and its meaning by use of the ethnographic record (Binford 1962). Accordingly, it somewhat similar to the direct historic approach (Willey and Sabloff 1993:125–127). Thus, the middle range is really the bridge between these two separate avenues of inquiry to make both more productive; hence the term "historic archaeology."

Historic archaeologists have exploited this mid-range theory of prehistorians through simple analogy by substituting the documentary record for the ethnographic record to exploit their own archaeological data more effectively. Hypothetically, the purpose is to get closer to the enriched real meaning behind the both realms of evidence (Leone and Potter 1988:13–21). Deetz's (1993) "Conjunctive method" is in some ways simply mid-range theory cautioned with the proviso that it comes into play only when neither source of data (documentary or archaeological) can solve the research question alone.

Combined with planning activity and contemporary drawings, mid-range theory can be a powerful tool of analysis.

Ideology

The determination of potential ideology within our suite of study sites is closely related to the site-selection process described above. Although ideology will be treated with caution in this short work, we surely can anticipate such things from our three predictive models that categorically include hierarchal building arrangements. Chang (1972:24–2) notes that the "organization of human activity is essentially hierarchal in character." From this inference one can conclude that the more organized human activity, the greater the hierarchal character. We will not find such ranked or ordinal architectural patterns unless two or more domiciles are present in an informative architectural statement that at least addresses a such hierarchal system.

In addressing the implications of such arrangements beyond simple hierarchal rankings, we have to rely heavily on model development to go further. Why?—because all sites might have socio-technic or technomic aspects, but only a few site types can potentially contain ideo-technic behavior (Binford 1962). Stated more bluntly, these represent a special type of ideological behavior that can be objectively demonstrated as present.

Leone (1977) argues that Mormon fencing and town planning will have technology present and is "embedded in the subsistence, social, and ideological systems of culture." In his study he suggested that such seemingly simple endeavors appeared deeply invested with the particular ideology of ethnic groups as sorts of "cultural teething rings." His article implies that this embedded ideology is particularly the case within frontier contexts when immigrants are most conscious of their unique identity as it intrudes into an alien setting and defines itself through reified material culture. In a similar vein, Leone (1977:194, 199) suggested that the Mormon frontier fencing and town planning are made up of subsystems.

Only a small step away is a switch to fortifications and towns. If so, boundaries, and community-level planning would be present only within certain types of fortifications—that is, those with more than one habitation. Minimally, it would be useful to couch each site's core structural components in cautious relation to social hierarchy, ideo-technic, socio-technic, or technomic functions (Binford 1962:217–26).

Praxiology

Other basic study techniques or concepts must be mentioned here for expedience. Briefly stated, praxiology is the science of efficient action for maximum results from the lowest acceptable level of effort (Kotarbinski 1913, 1955; Skolimowski 1965). In as much as efficiency requires rational

behavioral selections, this theoretical approach seems particularly useful for analyzing the practical constraints of colonial military studies and small-scale variant modifications of planning ideals for towns within the increasingly insular Chesapeake frontier.

The Direct Historical Method

Additionally, the direct historic approach, normally used for prehistoric archaeology, will be applied with great caution to show how later defensive works reflexively support 17th-century interpretations based on common functional needs and frontier contexts (Binford 1991:147–149; Willey and Sabloff 1993:125–127). Conversely, later examples will also show how earlier archaeological excavated works apparently governed many later frontier examples. The appeal in this approach is the basic conservatism in military architecture through time simply because relatively few methods are necessary to defend a settlement expediently after discounting variances with the more complex trends within the high style of military architecture. Thus, in addition to more recent fortifications, we can provide a time depth that reflects classical times to identify fortifications.

The Summary Methodology Made Practical by One Exemplar

The overall mechanism of our research design is now fairly complex, but the approaches must be packaged into this short document. The greatest burden on this study outline is that of mid-range theory. That approach

requires creation of a fairly rich historical texture that normally can be created only on a site-by-site basis. Anthropological approaches risk generalization about past behavior based on sites that are often more complex than such approaches allow. Therefore, this process will be more or less impossible to apply equally with our entire suite of study sites. Yet without cross-comparisons of two or more sites, we gain little (Watson et al. 1984:188). What should be done?

The most expedient solution would be to choose one study site as an exemplar based on a legitimate application of mid-range theory that serves for more spatially streamlined comparison of the larger suite of study units. Accordingly, 44PG65 at Flowerdew Hundred has been chosen based on its potential for development of an exemplar model that may propel all subsequent study units in some meaningful direction (Barka 1993; Deetz 1993; Hodges 1993). Owned successively by the two wealthiest men in Virginia during a period of active warfare with Native Americans (1622–32), the 44PG65 study unit is most likely to yield up secular and ideo-technic planning ideals that bridge the gap between public corporation ventures such as at James Fort and private corn- and tobacco-producing plantations such as at the remainder of the Virginia study units (Morgan 1975).

Therefore, armed with this research design, we can develop the following hypothesis repeated from the beginning of this discussion but perhaps more meaningful now:

> **Had the English never settled in Ulster, not one single thing in Virginia would have changed. Both settlements were animated by larger classically and Renaissance-inspired models for both scaled down town planning and fortification. Those in turn were deeply affected by ordinal Vitruvian plans compromised by the chain of being and enclosed in a viable and dynamic international military defensive tradition attenuated up by interceding 16th-century warfare.**

Limitations of the Database

In many cases no formal site report was available on some key sites we discuss. What is available is baseline information that will allow this discourse to proceed based on overall interpretive inferences by many scholars. The base materials are as follow:

1. A site plan with most or all information present.
2. A site evolution or means to understand the relationship between the site development and fort development.
3. Sample detail drawings of pertinent features.
4. Temporal controls for overall site structure and/or temporal site structure shifts.

The published and unpublished material available to the author is listed in the bibliography and cited in the text.

Thesis Chapter Organization

So this document functions in a reasonably expedient manner, the chapters avoid unnecessary repetition in building from particular to comparative interpretive arguments. Therefore, in Chapter 2 is the historic context for Flowerdew and 44PG65, Yeardley's Fort, along with a detailed interpretation of evidence of town and fort planning. The exemplary analysis of the Flowerdew material is then used to illuminate all subsequent comparative study sites. Accordingly, in Chapter 3 is a comparison of Flowerdew and James Fort, Jordan's Journey, Magherafelt, Martin's Hundred, the Harbor View Fort, and Clifts. This information is then summarized and discussed in terms of the goals of the hypothesis.