2019

Ancient Shipsheds

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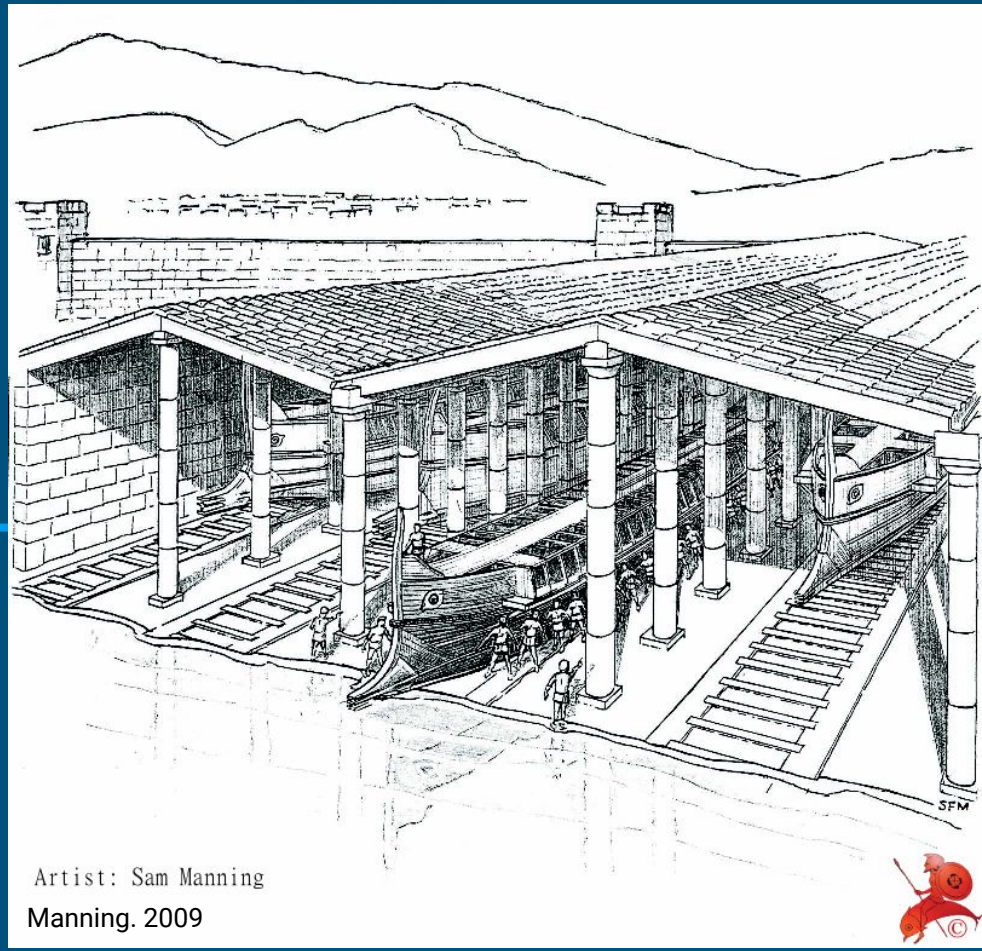
Ancient Shipsheds

By Peyton Tvrdy



Manning. 2009

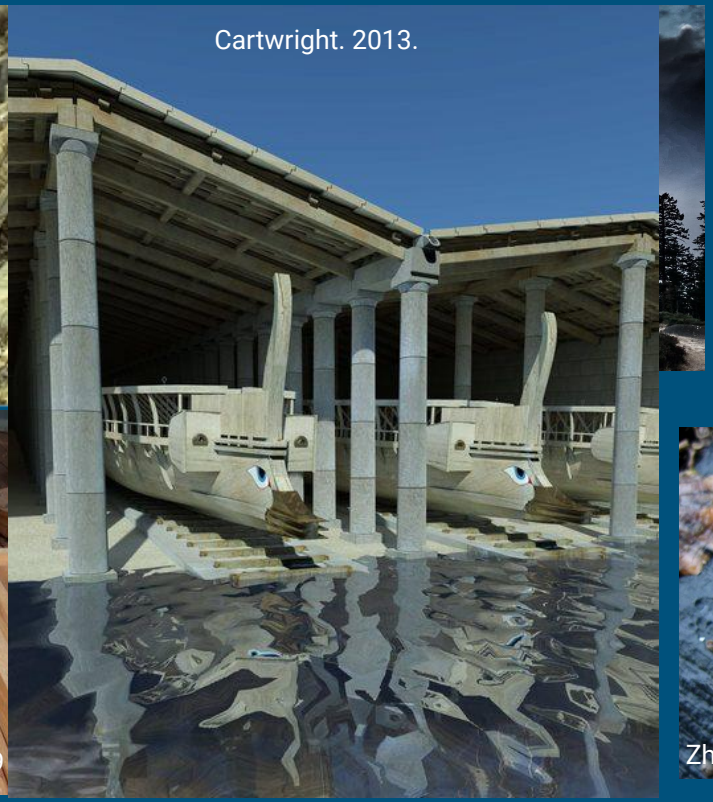
What are Shipsheds?

Covered buildings used for the storage and maintenance of warships in antiquity.

Purpose?


Waterlogged Wood Treatment. 2015.


Traditional. 2019

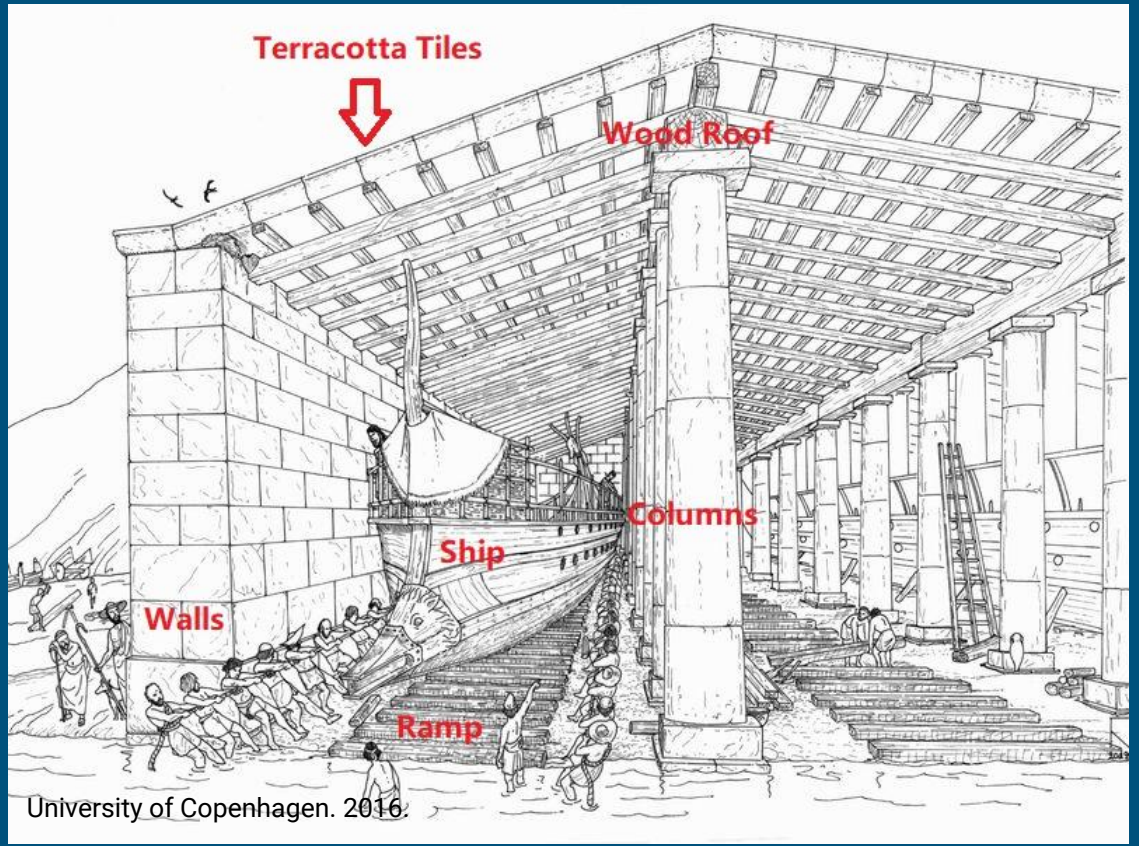

Cartwright. 2013.


Sherman. 2019.


Zhang. 2014

Shipshed Components

- Columns/Walls
- Wood Roof
- Carved Bedrock
- Ramps



University of Copenhagen. 2016.

Ramps

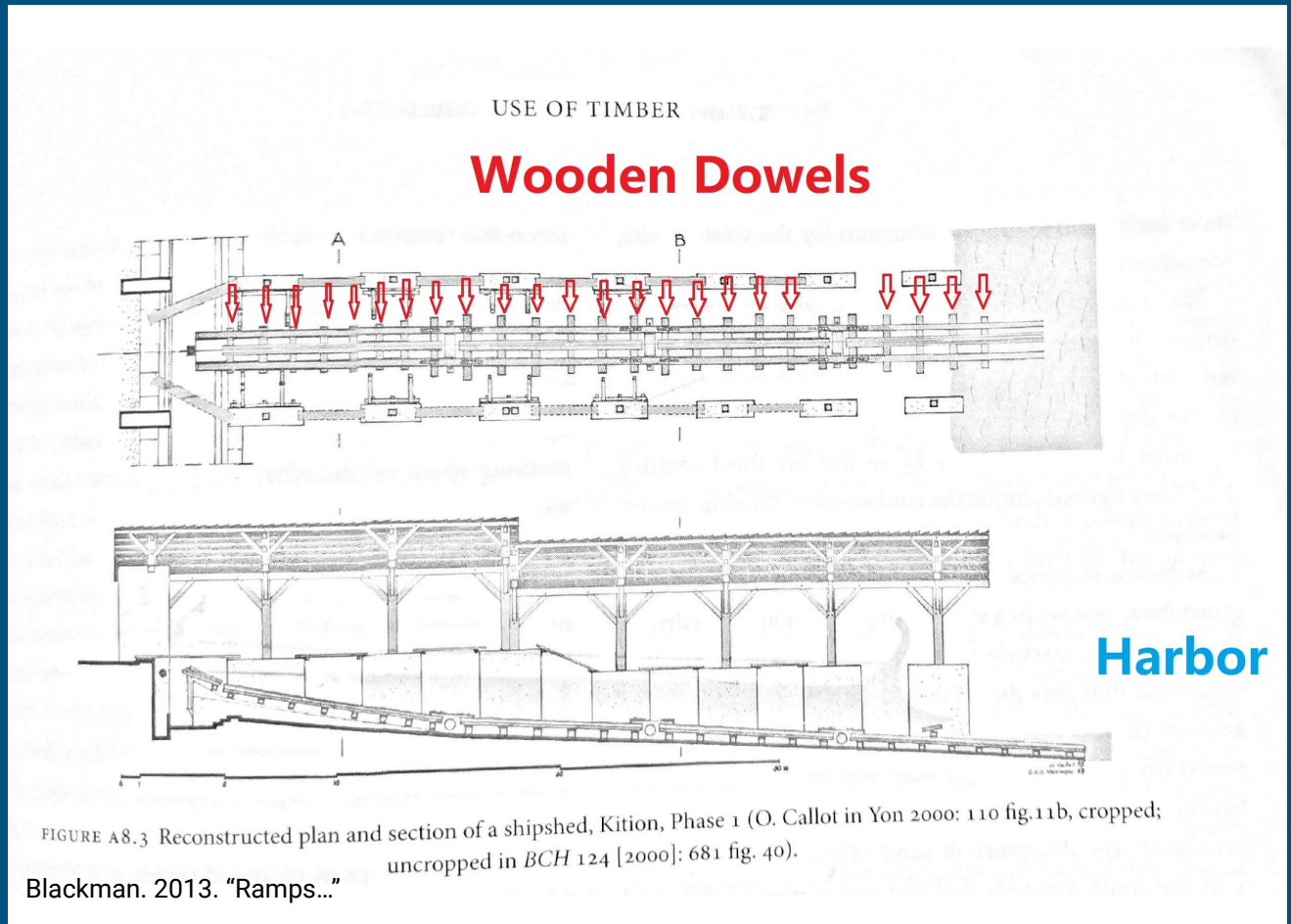


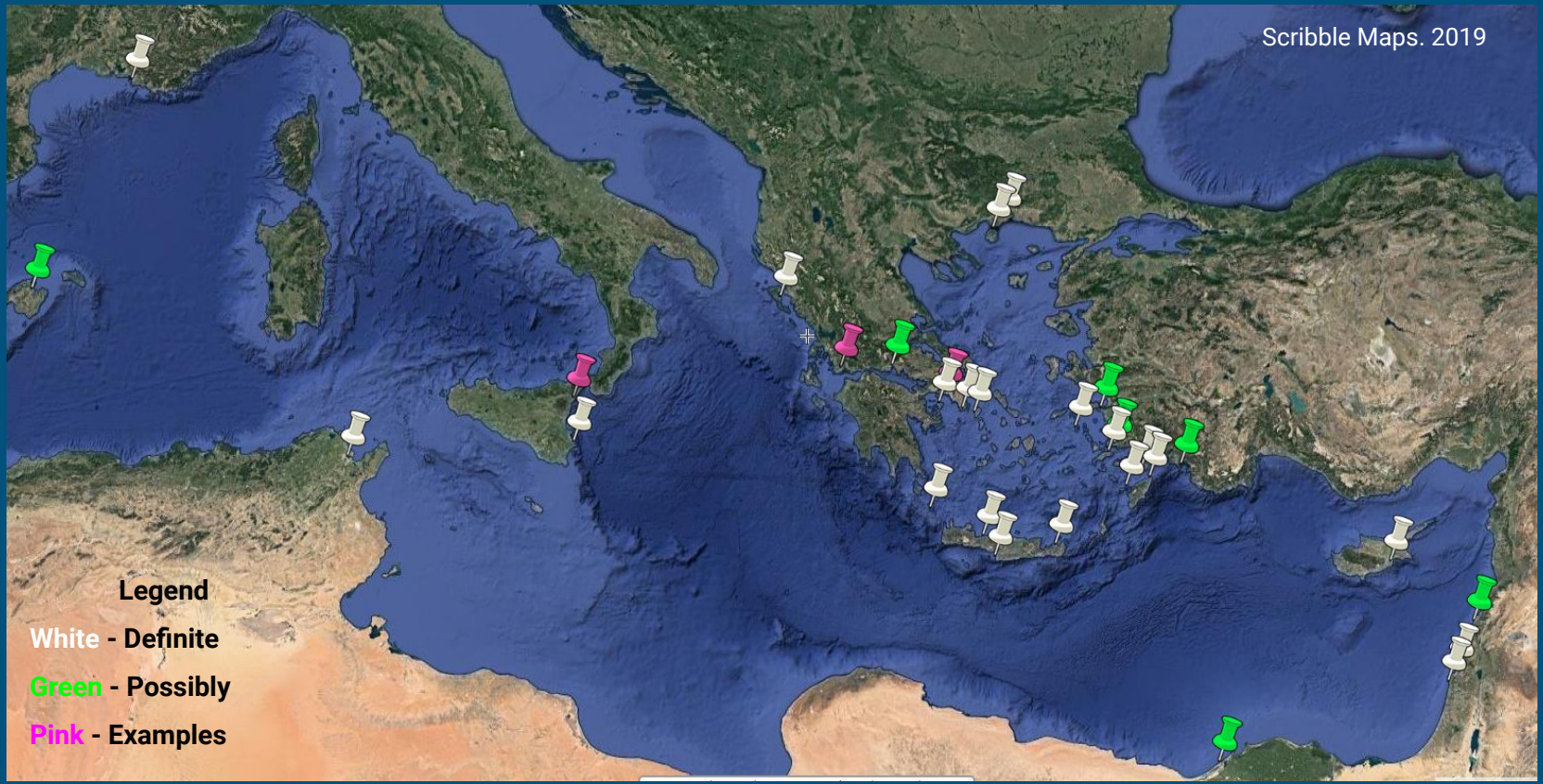
FIGURE A8.3 Reconstructed plan and section of a shipshed, Kition, Phase 1 (O. Callot in Yon 2000: 110 fig.11b, cropped; uncropped in *BCH* 124 [2000]: 681 fig. 40).

Blackman. 2013. "Ramps…"

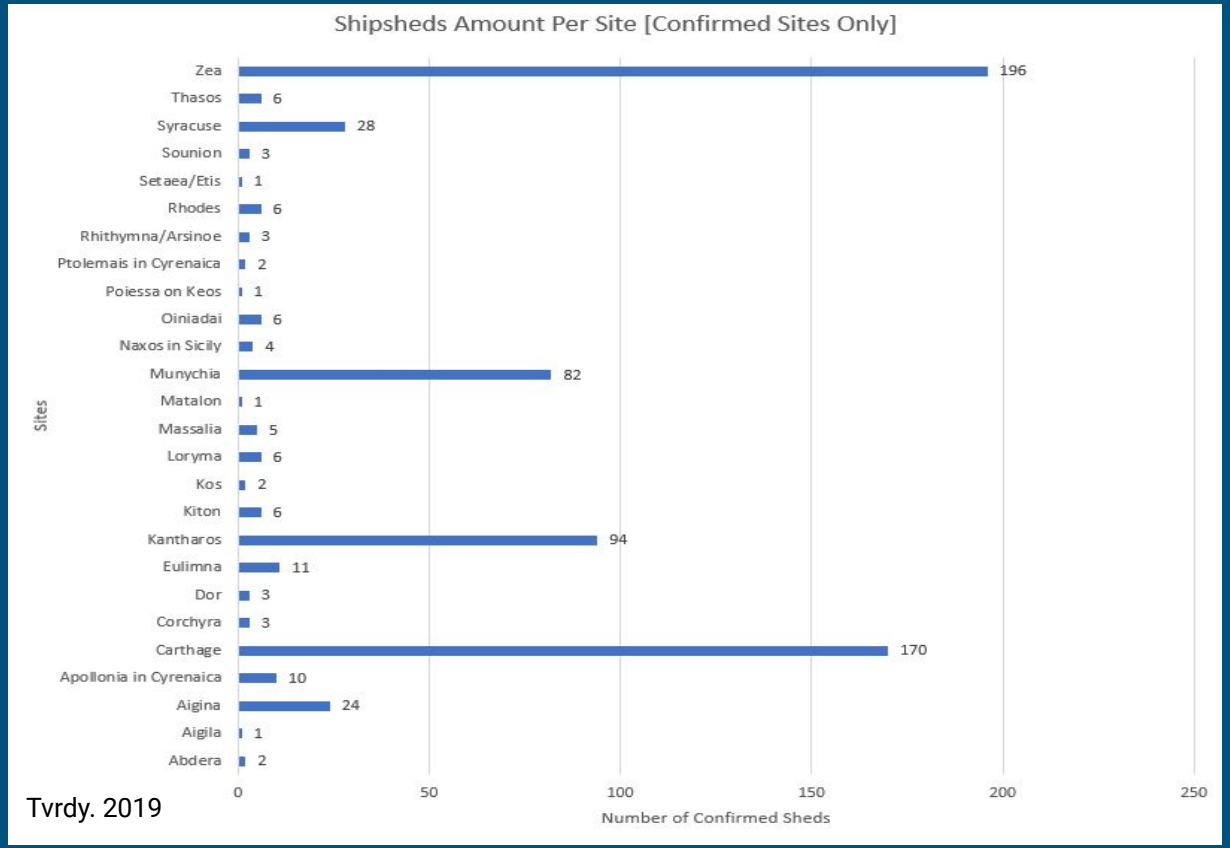
Why Study Shipsheds?

- Size of fleet
- Importance of harbors
- More information on triremes (4s, 5s, 6s, etc.)
- Ancient sea levels
- Significance of Naval Power
  - Money
  - Power
  - Military Dominance

Map

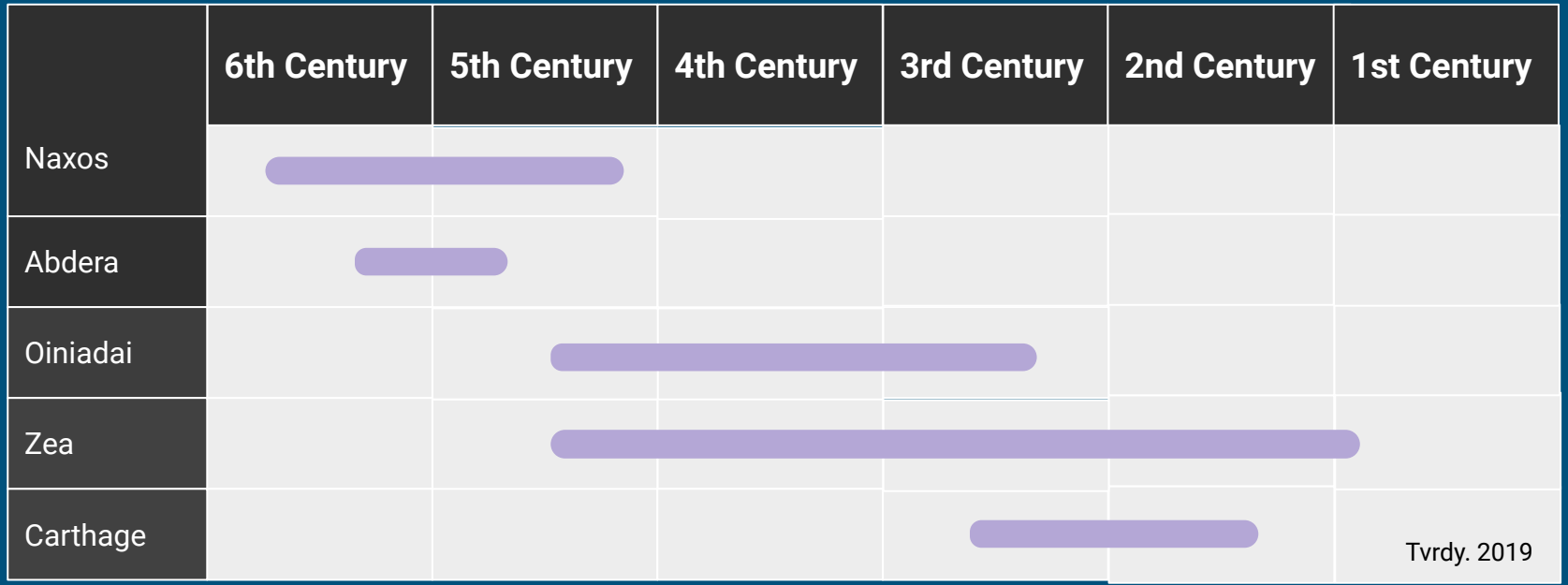

Scribble Maps. 2019
Legend
White - Definite
Green - Possibly
Pink - Examples

Sheds per Site



Tvrdy. 2019

Time Period

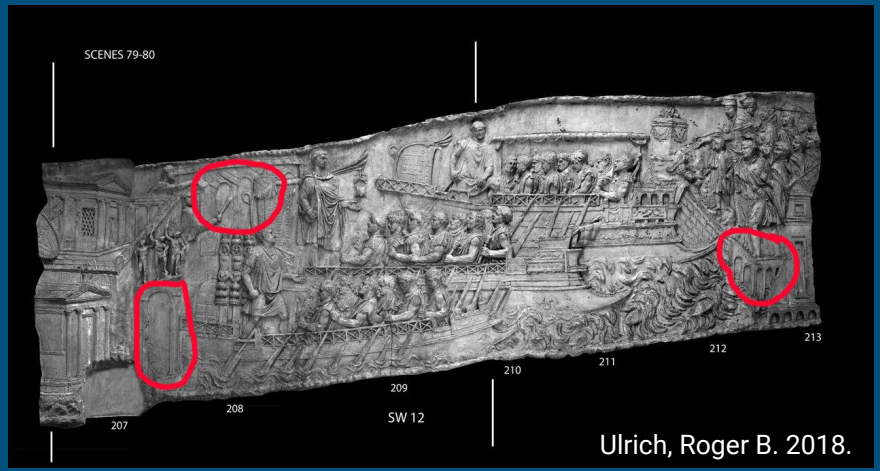

6th Century
5th Century
4th Century
3rd Century
2nd Century
1st Century
Naxos
Abdera
Oiniadai
Zea
Carthage
Tvrdy. 2019
LOREM

Challenges

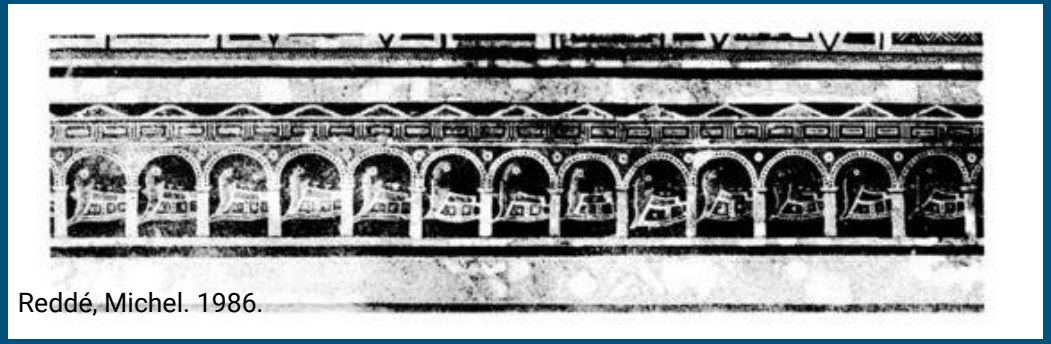
- Hardly any fully excavated
- Very poorly preserved
- Change in shoreline confusing
- Varied in size
- Sheds did not widen (4s, 5s, 6s, etc.?)
- No single way of anchoring ships in shed
- Lack of interest

Roman Shipsheds?

- No Roman archaeological sites
  - Port Cities on top of sites
- Only Art and Coins survive
- Mostly likely had arches



Ulrich, Roger B. 2018.


Reddé, Michel. 1986.


"Lollius Palicanus AR denarius." 2019.

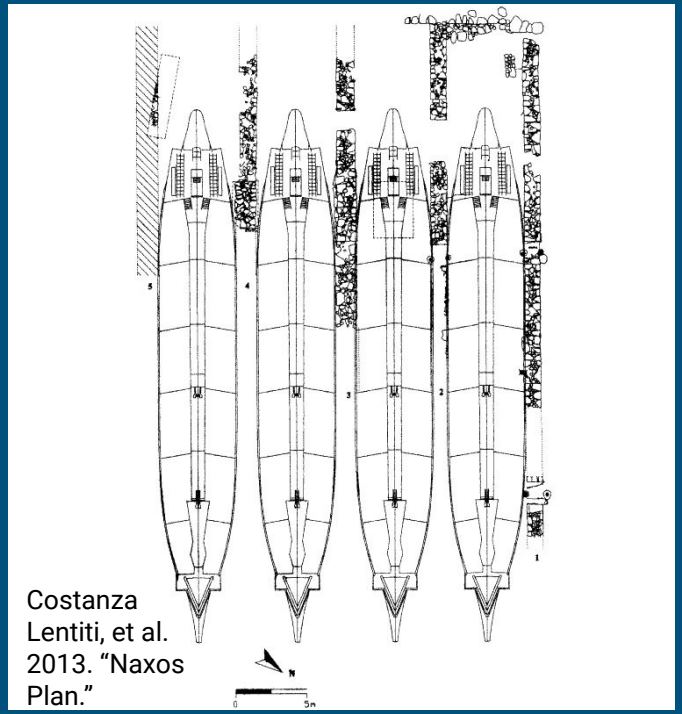

McCabe, Andrew. 2010.

Archaeological Examples

Archaeological Evidence: Naxos

Unique:

- Sand Ramps
- Open-air dry docks
- Paint pigments
- Stone Walls Only



Costanza Lentiti, et al. 2013. “Naxos Plan.”

- 6th century - 403 BC
- Greek colony of Sicily
- 4 shipsheds
- Excavation began: 1953
- 5.2-5.7 m wide 40-48* m long

Costanza Lentiti, et al. 2013. “Map…”

Map of Naxos

Archaeological Evidence: Oiniadai

Unique:

- Known length
- Large bronze rings attached to walls


Diffendale, Dan. 2012.

- Mid 5th century - 219 BC siege
- 6 Shipsheds
- Excavation began: 1835
- 389 BC - Greek Trireme base
- 6.77 m wide and 42.5 m long

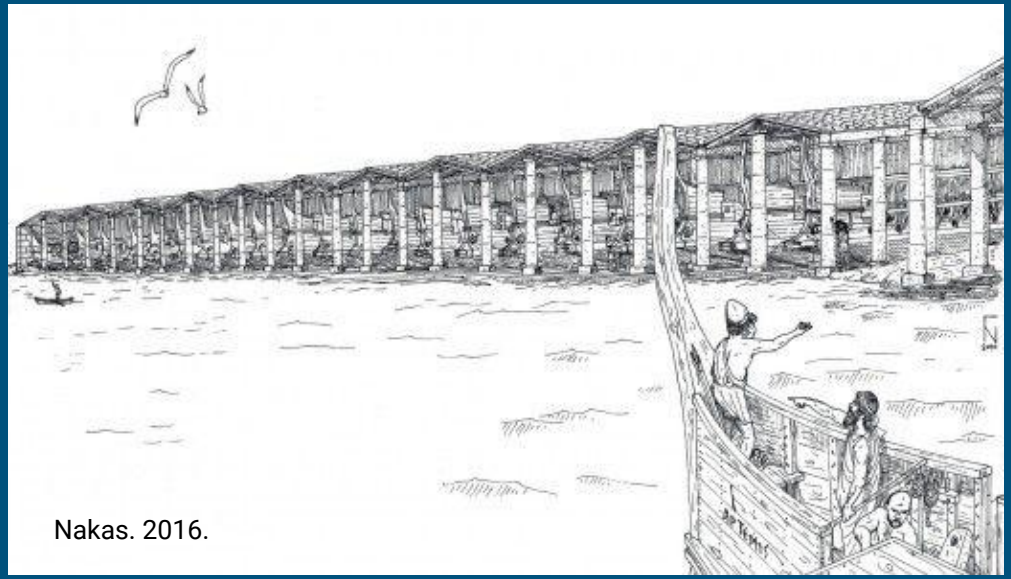

Elevations. 2019

Archaeological Evidence: Piraeus (Zea)

Unique:

- Large size
- 12 m “extra”

- Athen’s Naval Base
- 1 of 3 harbors in Piraeus
- 2nd half 5th century - 86 BC
- Before Peloponnesian War: 196 sheds
- Phase 3: 6.5 m wide and 57.6 m long*

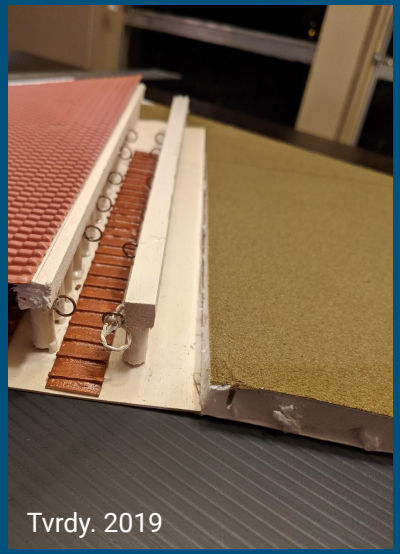


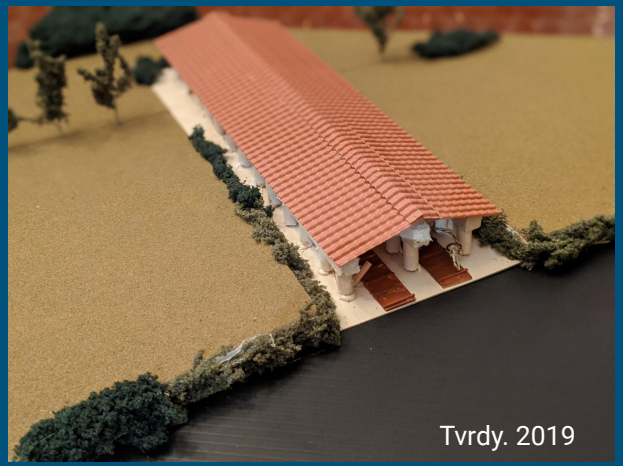
Nakas. 2016.

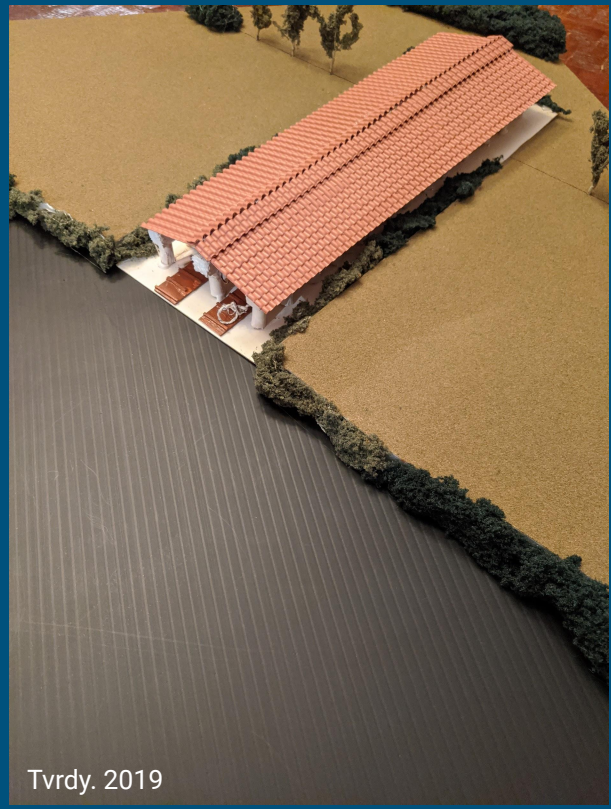
Blackman. 2013. “Research…”

Bohstrom, Philippe. 2016.

My Model







Hypothesis: Two Methods of Securing

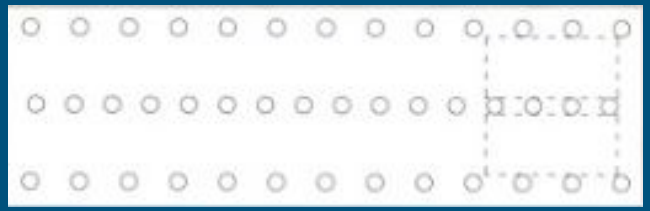
Bronze Rings

- Rope tied around and through bronze rings and secured to the ship

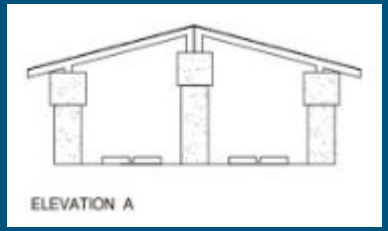
Wooden Supports

- Wooden sticks driven into the ground at an angle to support the ship

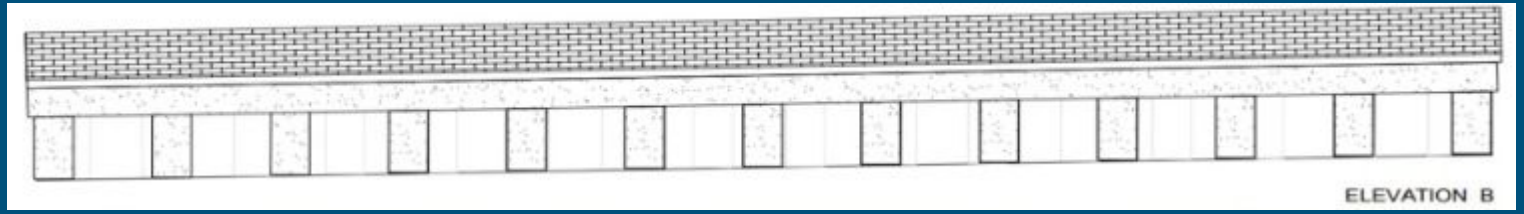
Model Columns and Elevation



- Uneven columns
- Middle Height- 4.18 m
- Outer Column Height- 3.87 m



- 1/2" scale (or 1/24" scale)
- 12 ‘extra meters of storage space



- Gradient of 5.4°

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Questions?

Peyton Tvrdy

Shipsheds of the Ancient Mediterranean Project

21 January, 2020

"Coates Library Research Thing Prize" Essay Submission

When beginning Dr. Hirschfelds "Technology in the Ancient World" course, I felt overwhelmed. The class was assigned an individual, semester-long research project that would explore an ancient technology, with a 10-minute presentation as our final. The requirements for the project were difficult. Dr. Hirschfeld required a very detailed research log, complete with a table of contents, as well as practice presentations and check-ups to make sure we were doing our work. Presentation day required that we have a 10-minute presentation, a written outline of our presentations, an annotated reference list, a 1-page handout, and questions for further research. This project was thorough and quite intimidating, but this project and my model have become one of my favorite experiences at Trinity University.

In the beginning, I was quite lost for topics. As a classics major, I love the ancient world, but because this was a technology course, I was a bit out of my element. Unfortunately for me, technology research, even ancient technology, is heavily based in science in mathematics, two subjects I am atrocious in. My first two topics quickly became out of my league. At first, I explored lighthouses, where I quickly learned there is little to no evidence for them besides concrete bases that survive. Quickly shifting gears, I decided to explore concrete, where I learned to my horror that the topic was riddled with chemistry. Panicking, I sought out Dr. Hirschfeld for ideas. Because of my interest in harbors, she advised me to keep that general topic for the moment. I was still concerned about narrowing down my topic, which prompted me to explore

the library. A quick “one-search” lead me to several books in the stacks that covered ancient harbors. One of these books, Shipsheds of the Ancient Mediterranean, quickly became the soul and holy book to my project. The book was perfect. Published in 2013, it is the essential book on shipsheds, and most likely the only book on shipsheds with such detail. For clarity, shipsheds are covered buildings used for the storage and maintenance of warships in antiquity. The field of ancient shipshed studies is small and underappreciated; however, several authors such as Kallopi Baika, David Blackman, and Boris Rankov, names I have committed to memory, joined forces to write most of the book themselves and dominate the shipshed field. This book fueled a significant portion of my research, but also lead me to other works through its extensive bibliographies. Noting the prominent researchers, I began seeking out their articles for supplemental, site-specific information.

My research pattern with the book was not straightforward. While I did eventually read the introduction and conclusion, I hopped from chapter to chapter, looking for information that would be most relevant at the time. One of the most helpful chapters, for a variety of reasons, was the chapter on Roman shipsheds. This chapter was informative in that it confirmed that there are no surviving Roman shipsheds, and also that there are other means of learning about shipsheds, such as through art and coins. This source inspired me to look for more art, leading me to the beautiful fresco in Michel Reddé’s 1986 work Mare Nostrum. The art and coins were a fun touch to the project, given that most of the shipshed archaeological sites are, at best, sloped concrete and a handful of column drums. Due to there being 26 confirmed shipshed archaeological sites in the Mediterranean that are all vastly different, I knew I had to narrow down my project to focus on 3 site examples. After many hours spent reading the Shipsheds of

the Ancient Mediterranean site catalog, I settled on the site of Naxos, Oiniadai, and Zea, one of Piraeus' 3 harbors. To me, these were the most distinct sites with the most evidence, making them great examples. The Zea harbor shipsheds were so impressive that I was inspired to make a model based on the catalog.

Over Thanksgiving break, I created a ½ inch scale model of the Phase 3 shipsheds in Zea. With this model, I hoped to accomplish 2 things: to help others visualize the massive scale of shipsheds and to propose 2 hypotheses of securing ships within the shed. In scale, the model is accurate, from column height, column width, the distance between columns (both inner and outer), ramp gradient, roof height, and, of course, the length and height of a shed complex. I chose the Phase 3 sheds because they had the most evidence archaeologically, being the most recent (Peloponnesian War Era) and because they had a peculiar 12 'extra' meters compared to a standard shed. I use the term standard here loosely as there was no blueprint for shipsheds and they all differed from each other, but archaeologists have gathered that only about 44 m of shipshed were needed for the ships at the time. The Phase 3 shipsheds have an estimated length of 56 m. What this space was used for is uncertain, but archaeologists agree it was most likely used for storage space. In addition to speculating about the extra 12 m, the model allowed me to try out 2 theories of securing ships. One of which was bronze rings, as supported a local legend from the Oiniadai shipsheds. While physical evidence of the rings has never been found, it is possible that they did exist and were used, with rope, to secure the ships. Another theory, supported by the Naxos site, claims that wooden stakes were driven into the ground at an angle into small pits. These wooden stakes would keep the ship from tipping over but could have punctured hauls. Both of these theories are presented in my model.

This research project, while daunting at first, has been one of the most rewarding experiences I have ever had a Trinity. Months of research and extensive note-taking culminated into my model and presentation, both of which have become a part of my soul. My project as a whole has become one of my biggest accomplishments at Trinity, and I hope to showcase my accomplishment through this competition.