

Phyto-Charter Solutions Heat Treating System

Tyler M. Player, P.E.
Player Design, Inc.
www.playerdesign.net



Company Profile

- ⊗ EPC provider of Drying & Energy Systems
- ⊗ Founded in 2008
 - ⊗ 3 Offices in Maine, USA
 - ⊗ Projects in Asia, Australia, North America
 - ⊗ Full EPC Pellet Plants, Shavings Plants, Agricultural Feed
 - ⊗ Drying and Energy Systems in the Wood Products Industry



Phyto-Charter Solutions Project

- ⊗ EPC Responsibility for Eastport Port Authority to:
 - ⊗ Complete conceptual design
 - ⊗ Procure fabrication services and complete delivery of (2) HTU
 - ⊗ Complete deployment plans and design enclosure system
 - ⊗ Finalize controls and compliance strategy for EU Phytosanitary compliance



Regulatory Approvals Awarded Permitting Commercialization



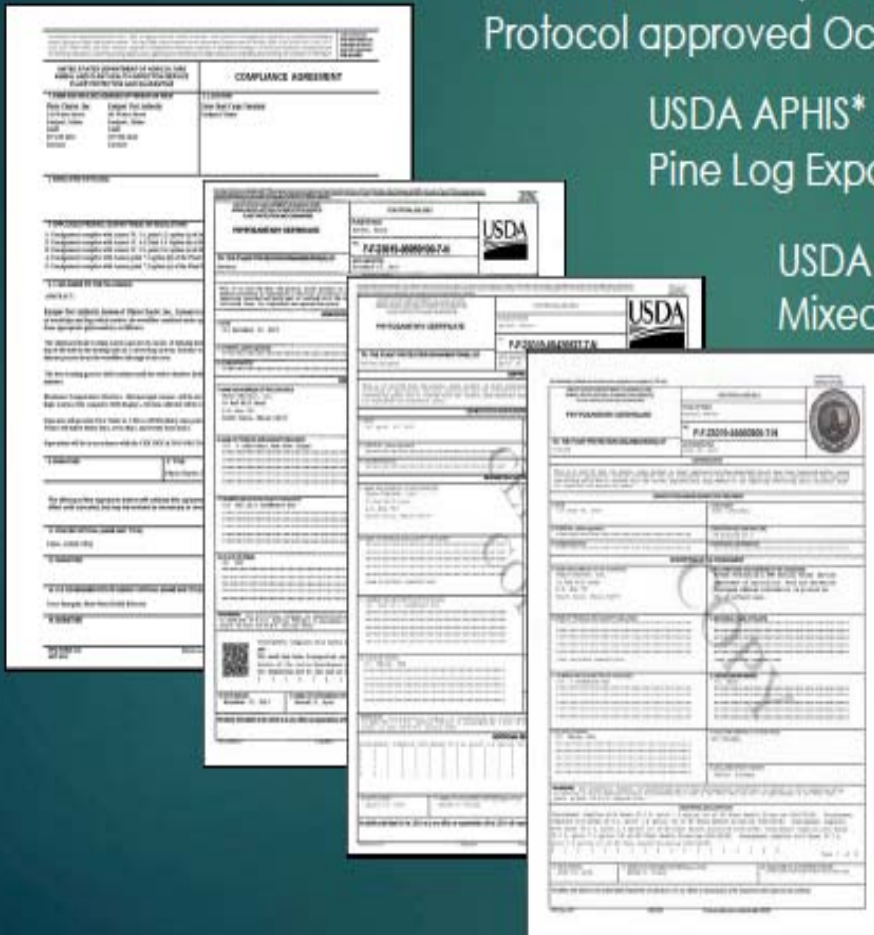
USDA APHIS* Compliance Agreement and
Protocol approved Oct. 13, 2017

USDA APHIS* Phytosanitary Certificate for Red
Pine Log Export issued on Nov. 17, 2017

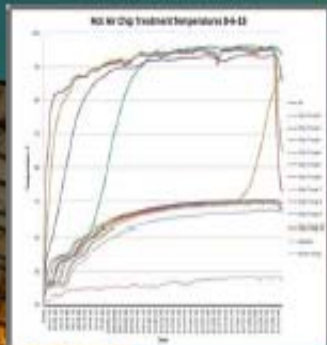
USDA APHIS* Phytosanitary Certificate for
Mixed Conifer Export issued on April 19, 2017

USDA APHIS* Phytosanitary Certificate
for Mixed Biomass Woodchips Export
issued on June 26, 2014

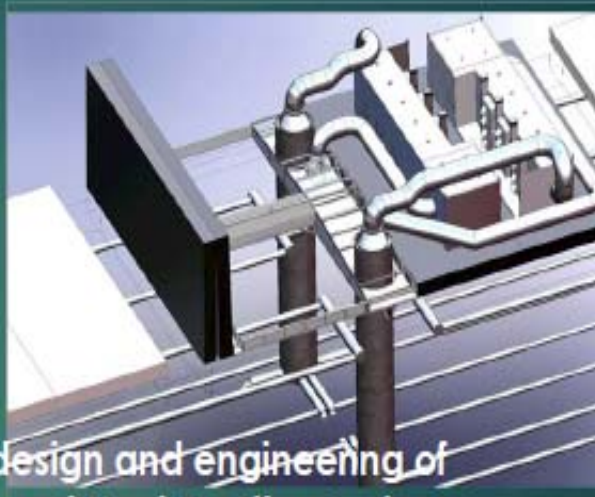
*United States Department of Agriculture - Animal, Plant,
Health Inspection Service



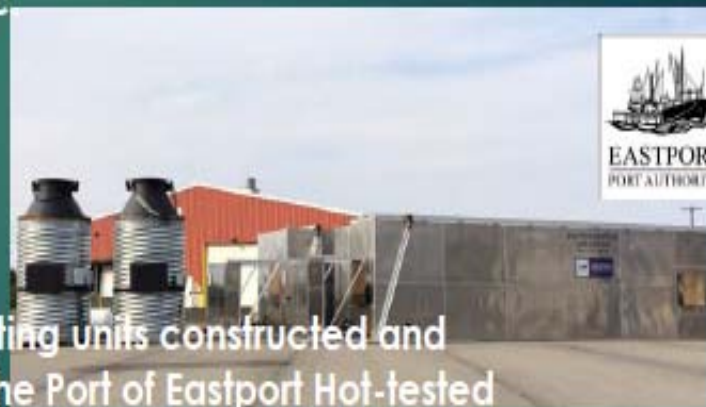
Technology Achievements



Mockup of 36' diameter core of chip vessel hold. Testing validated efficacy by USDA for shipboard sanitizing of biomass for export.

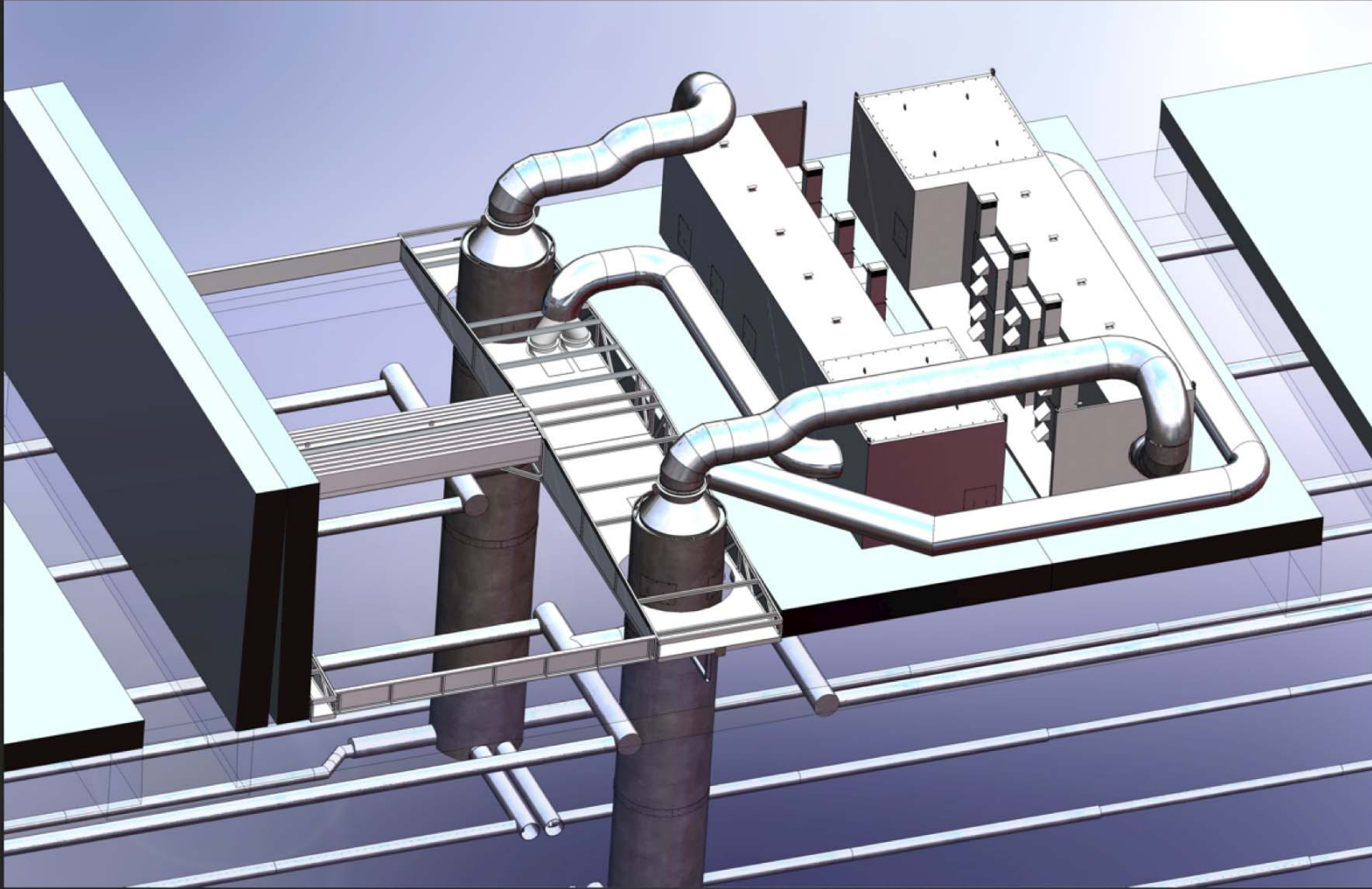


Final design and engineering of Shipboard Heat Treating System by PDI Inc.

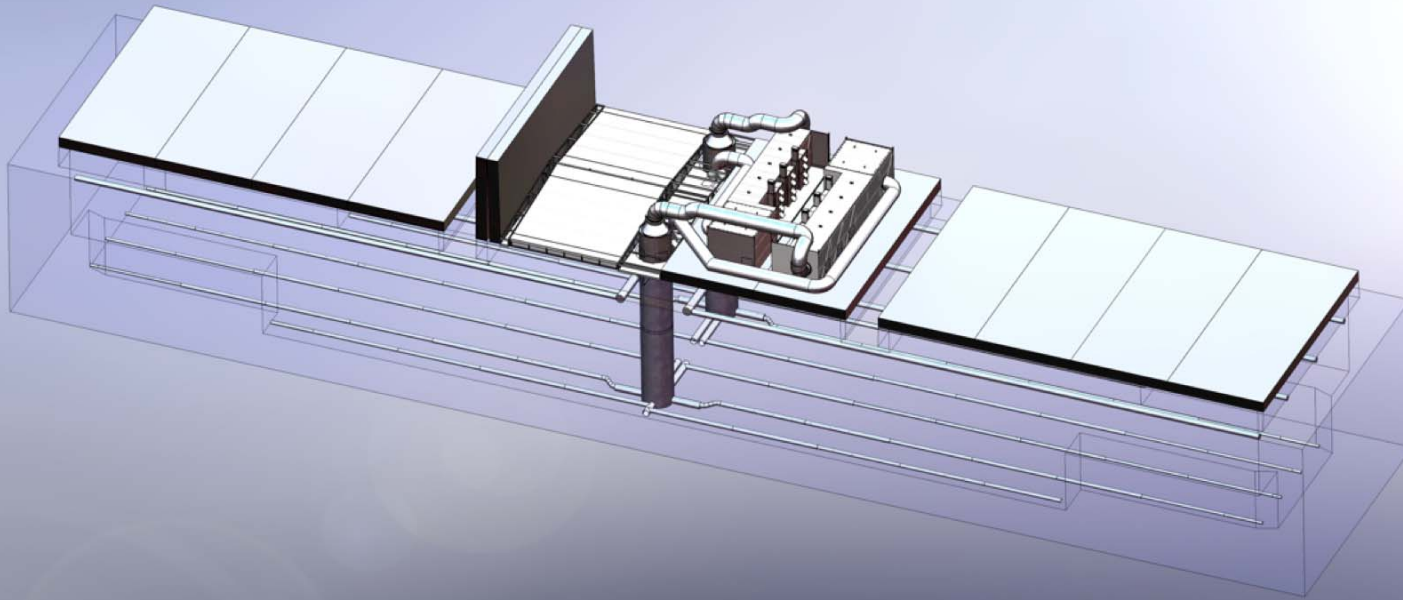


Two heat treating units constructed and delivered to the Port of Eastport Hot-tested September 2017; ready for shipboard deployment.

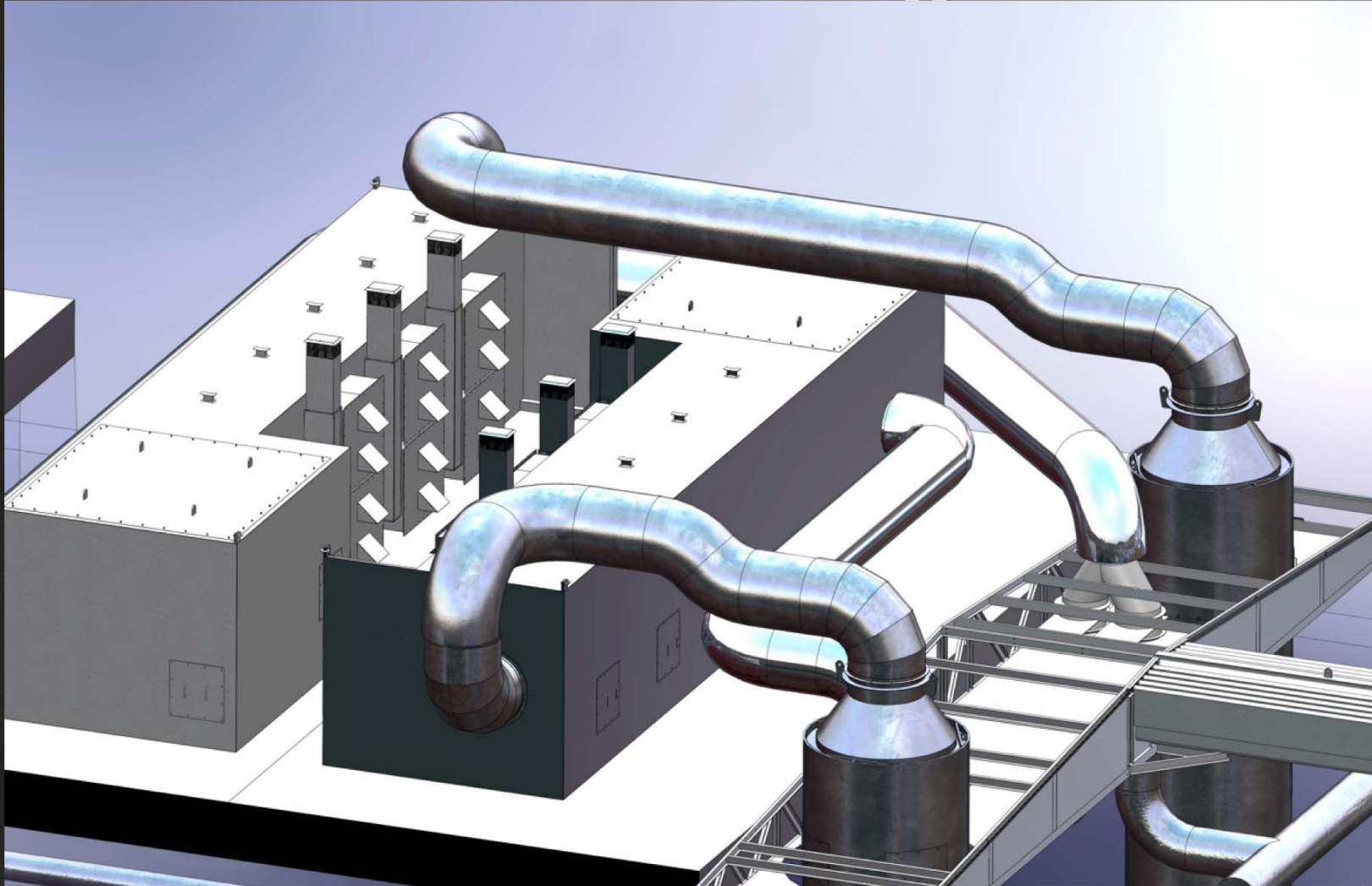
Heating Units



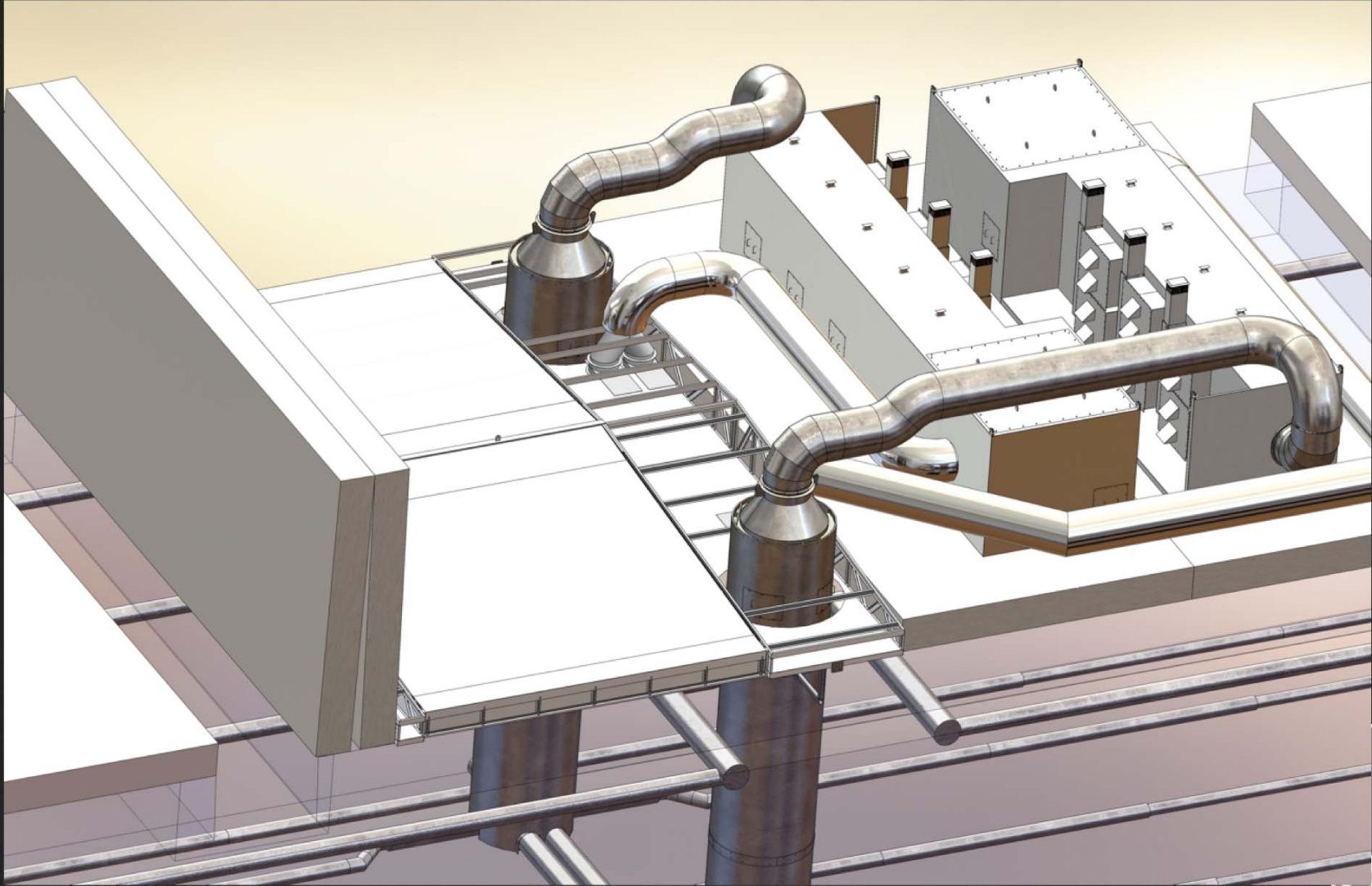
Ship Hold Layout



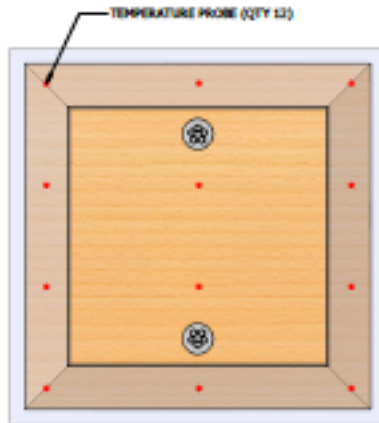
Heat Treating Units



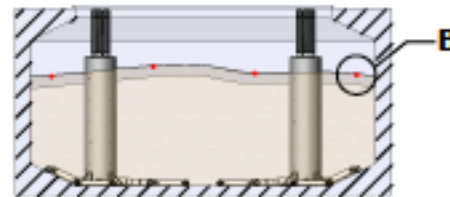
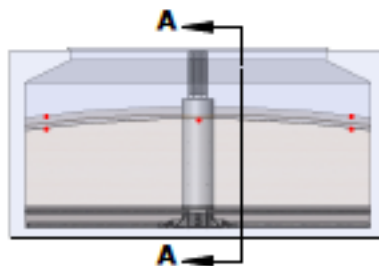
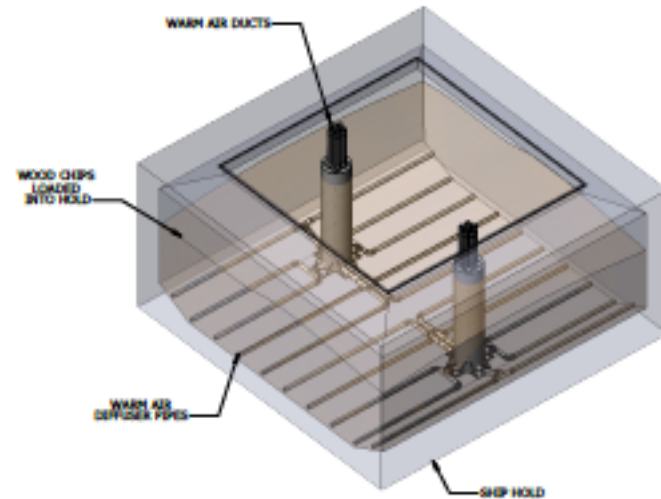
System Deployment



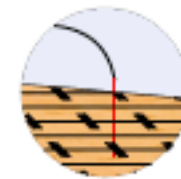
Regulatory Compliance



TEMPERATURE PROBE LAYOUT



SECTION A-A



DETAIL B
PROBE DETAIL

Regulatory Compliance

- ⊗ 16 locations at varying depth for temperature readings
- ⊗ Online display & damper adjustment for hold segmentation
 - ⊗ 5 damper zones
 - ⊗ 3 return air zones
 - ⊗ Active process management for optimization of time
- ⊗ Hold time of 30 minutes at 56 C
 - ⊗ Complies with USDA-APHIS and EU Phytosanitary Requirements



Questions

Contact Information:

Tyler Player
PDI
29 Second St.
Presque Isle, ME 04769
Office: 207.764.6811

www.playerdesign.net

tyler@playerdesign.net

