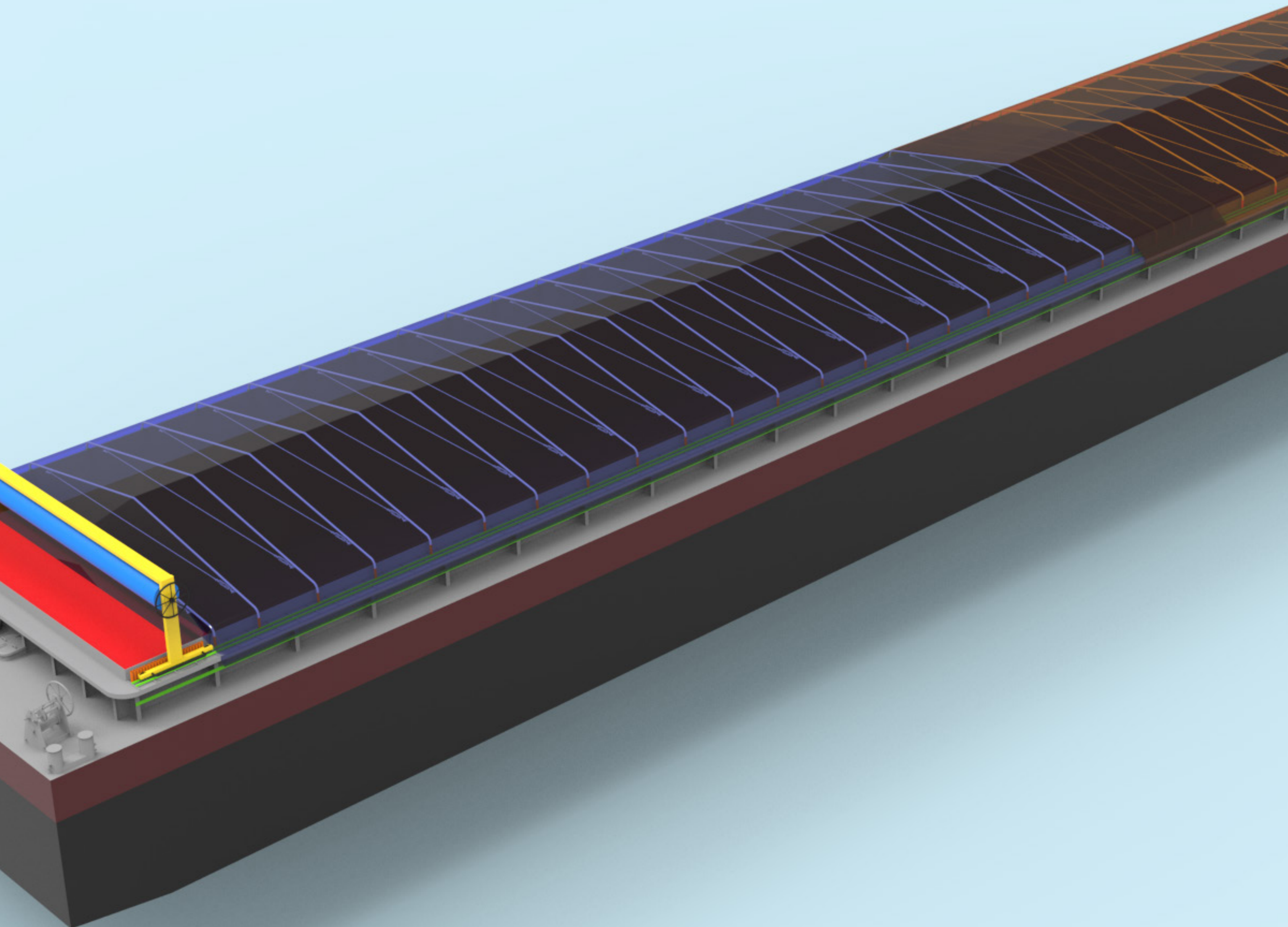


TENT HATCH COVER INSTALLATION PROJECT



NAVAL ARCHITECT BUREAU

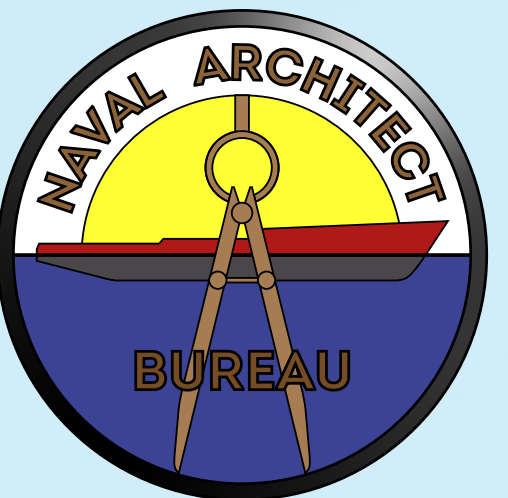
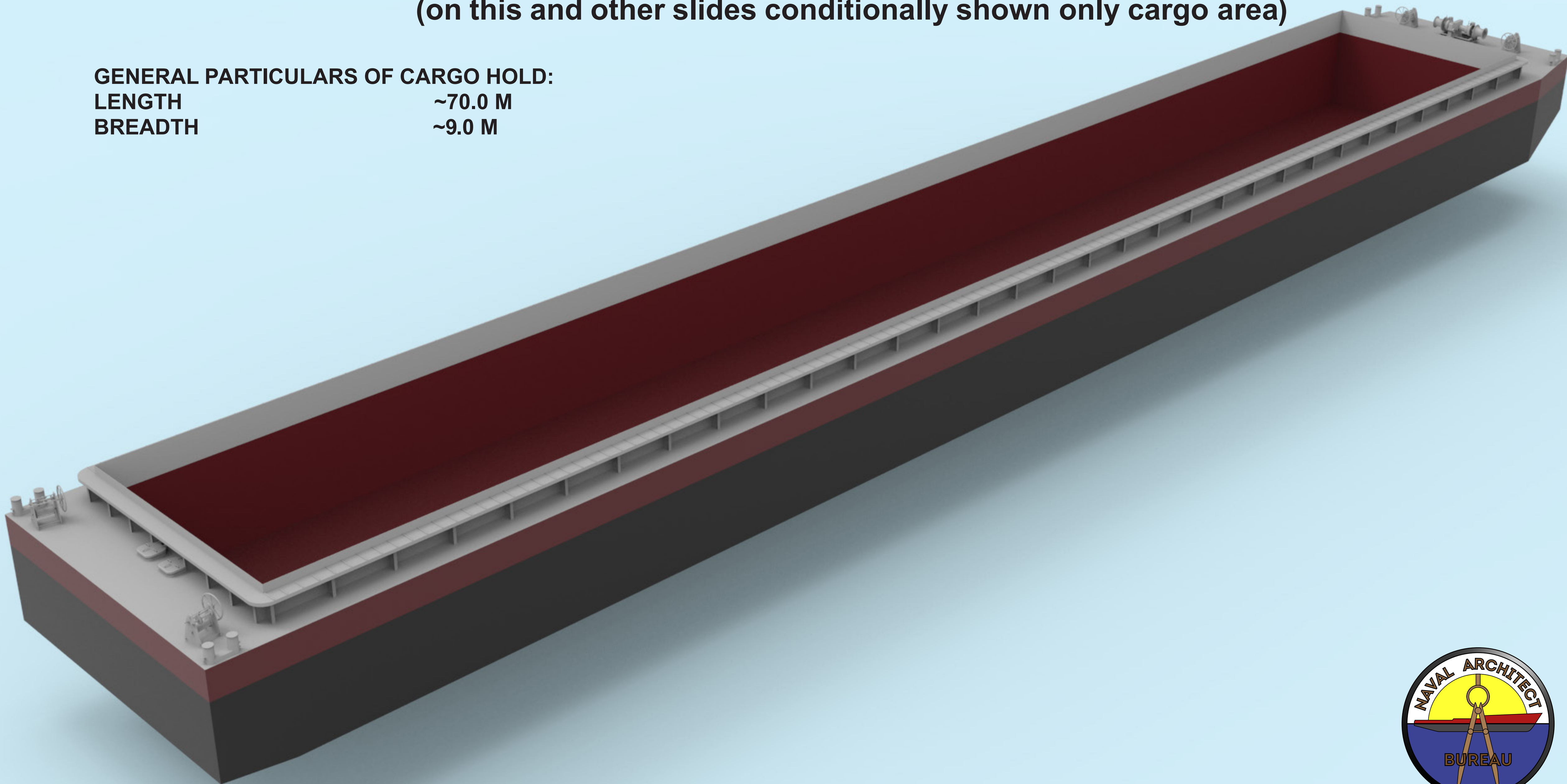
Ship design
Vessels modernization and reclassification projects
Developing of operational documentation
Evaluation of ships technical condition



GENERAL VIEW OF THE EXISTING TYPICAL VESSEL (on this and other slides conditionally shown only cargo area)

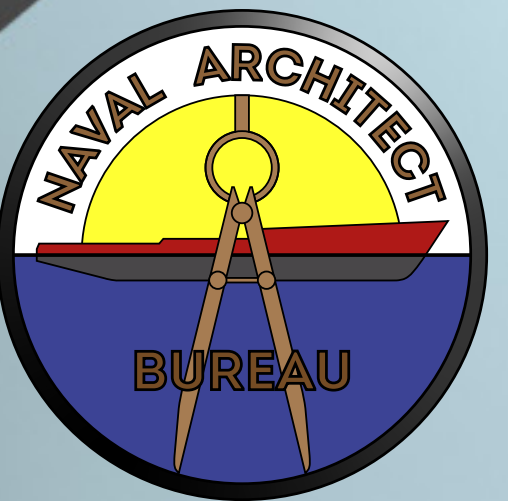
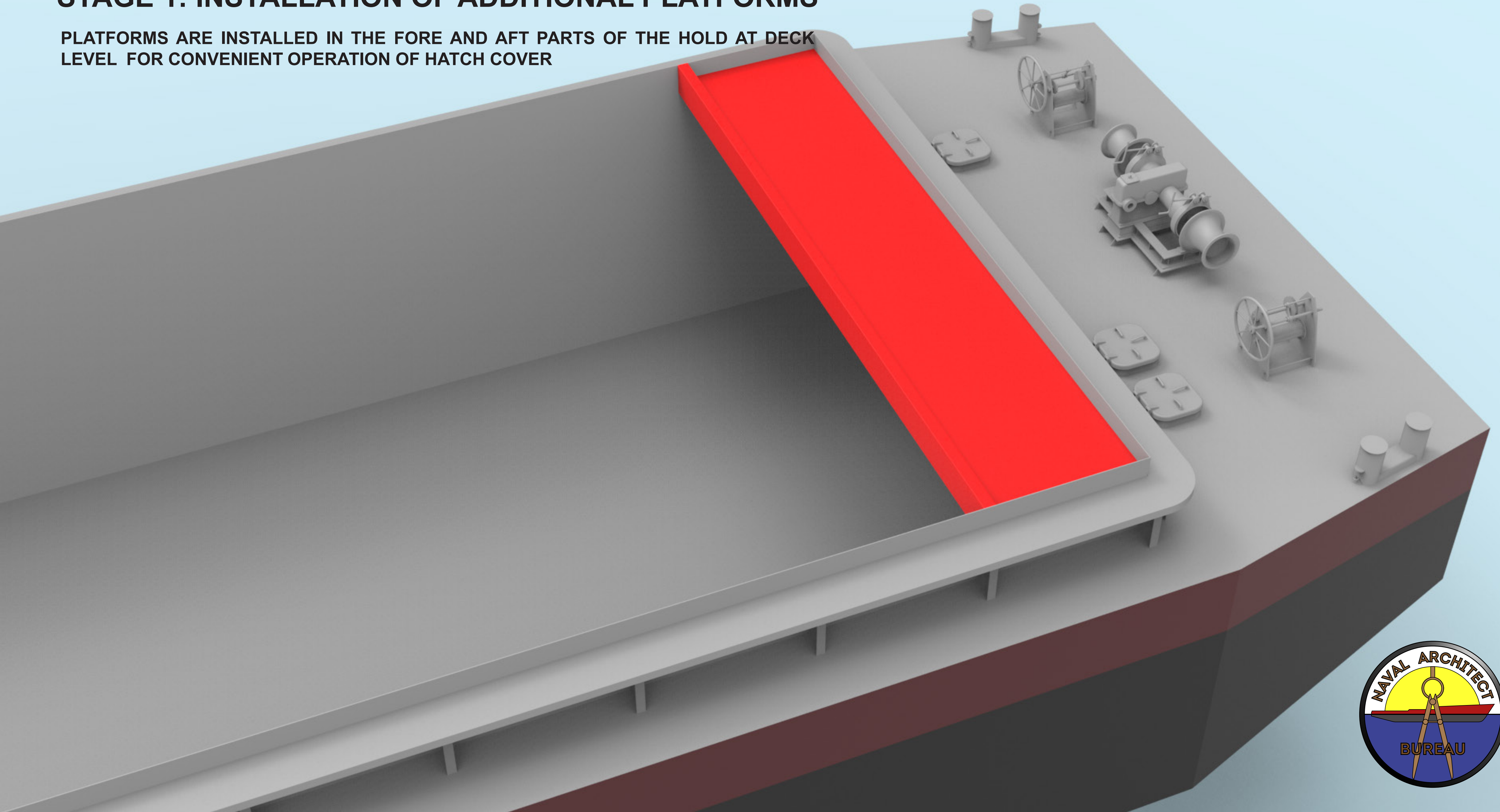
GENERAL PARTICULARS OF CARGO HOLD:

LENGTH ~70.0 M
BREADTH ~9.0 M



STAGE 1: INSTALLATION OF ADDITIONAL PLATFORMS

PLATFORMS ARE INSTALLED IN THE FORE AND AFT PARTS OF THE HOLD AT DECK LEVEL FOR CONVENIENT OPERATION OF HATCH COVER

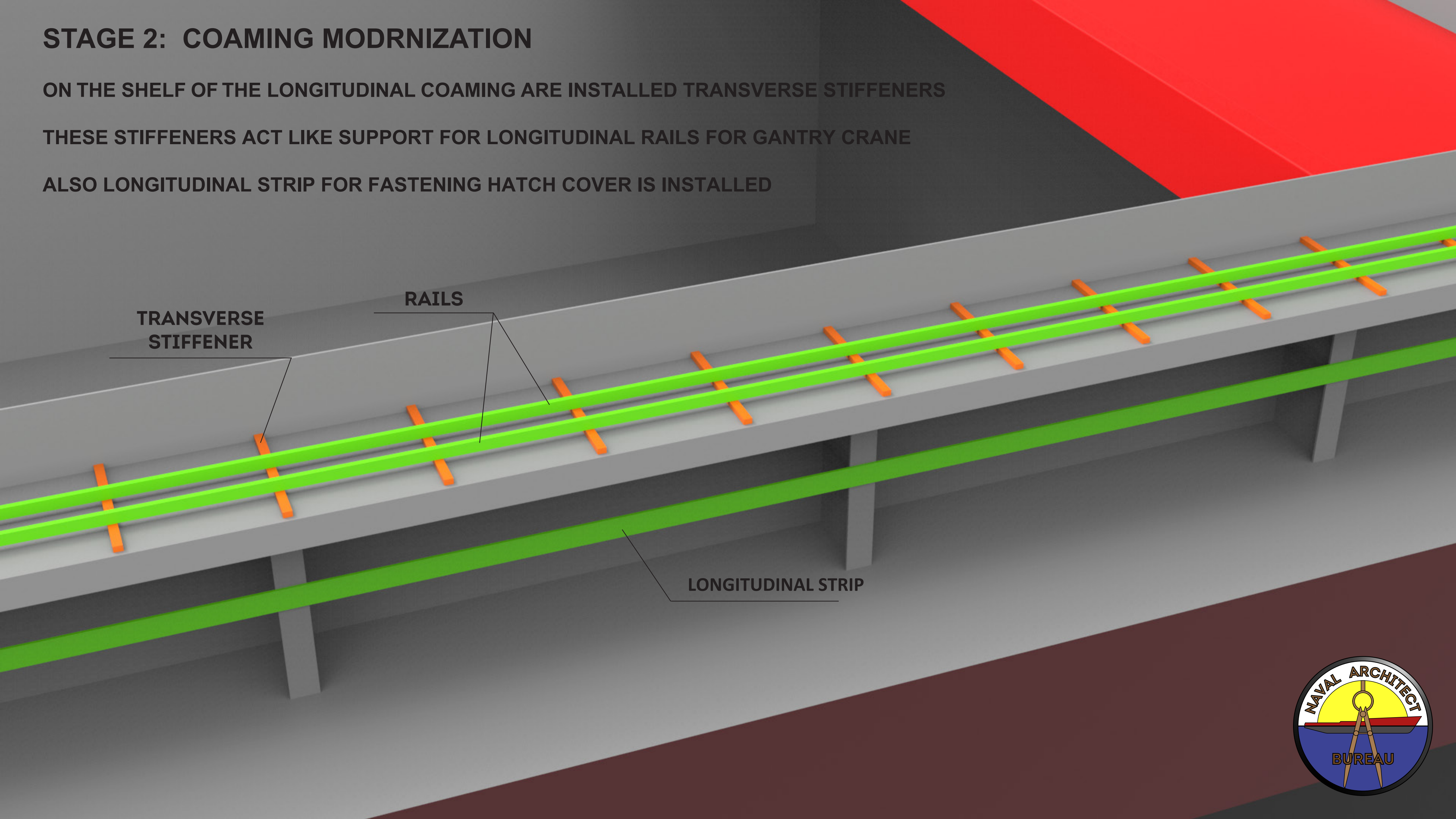


STAGE 2: COAMING MODRNIZATION

ON THE SHELF OF THE LONGITUDINAL COAMING ARE INSTALLED TRANSVERSE STIFFENERS

THESE STIFFENERS ACT LIKE SUPPORT FOR LONGITUDINAL RAILS FOR GANTRY CRANE

ALSO LONGITUDINAL STRIP FOR FASTENING HATCH COVER IS INSTALLED



TRANSVERSE STIFFENER

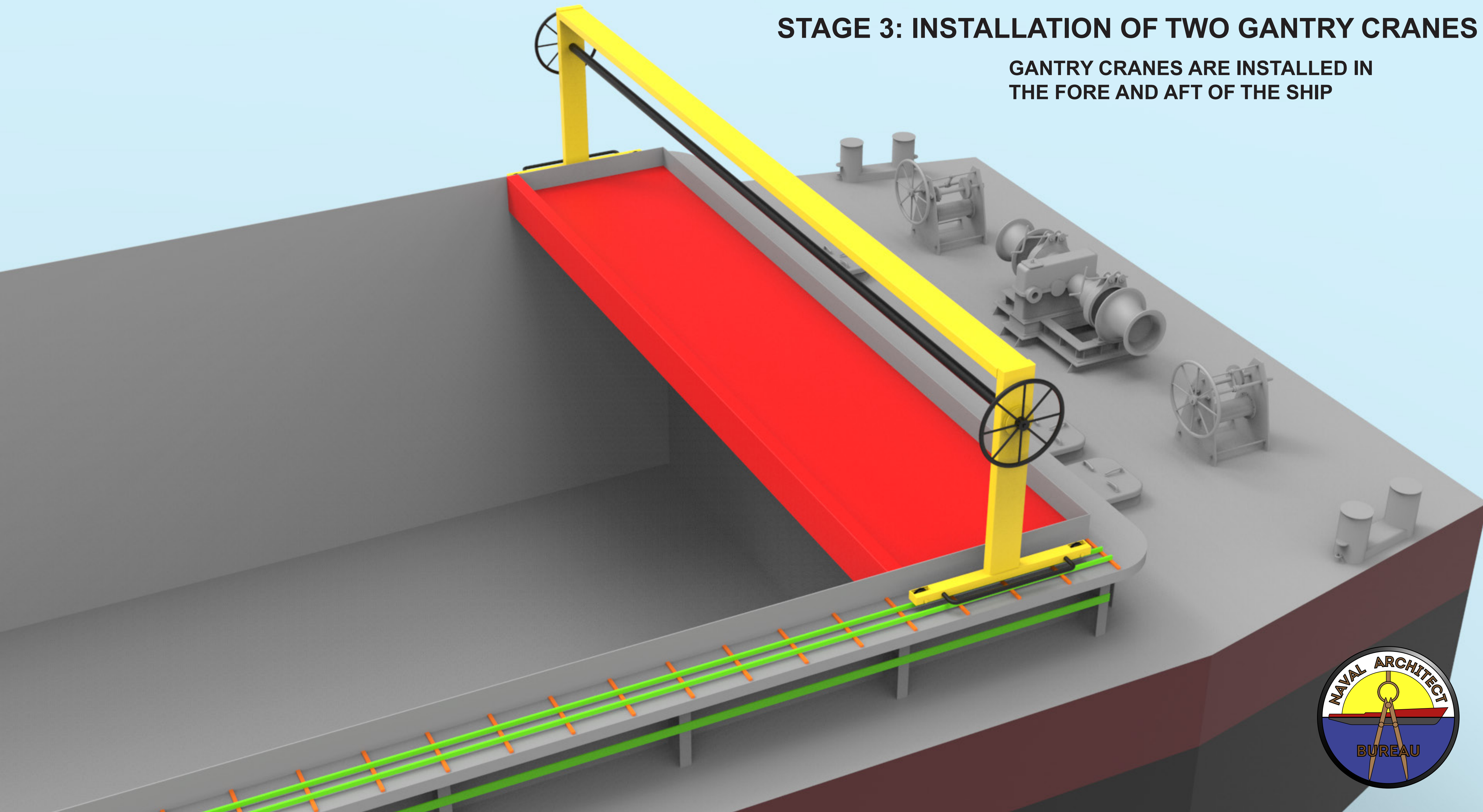
RAILS

LONGITUDINAL STRIP



STAGE 3: INSTALLATION OF TWO GANTRY CRANES

GANTRY CRANES ARE INSTALLED IN THE FORE AND AFT OF THE SHIP



STAGE 4: TUBE HOLDERS INSTALLATION

TUBE HOLDERS FOR TENT COVER FRAMES ARE TO BE WELDED ON COAMING SHELF

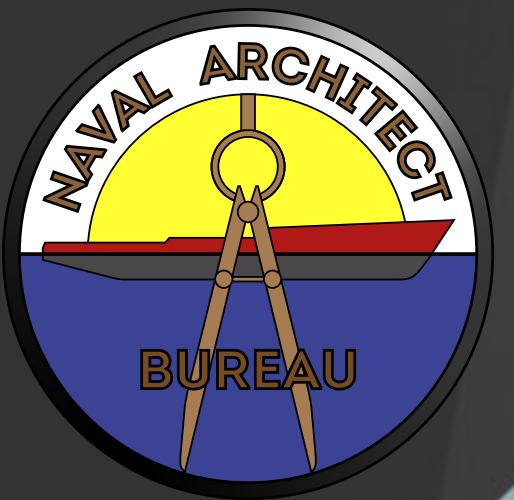
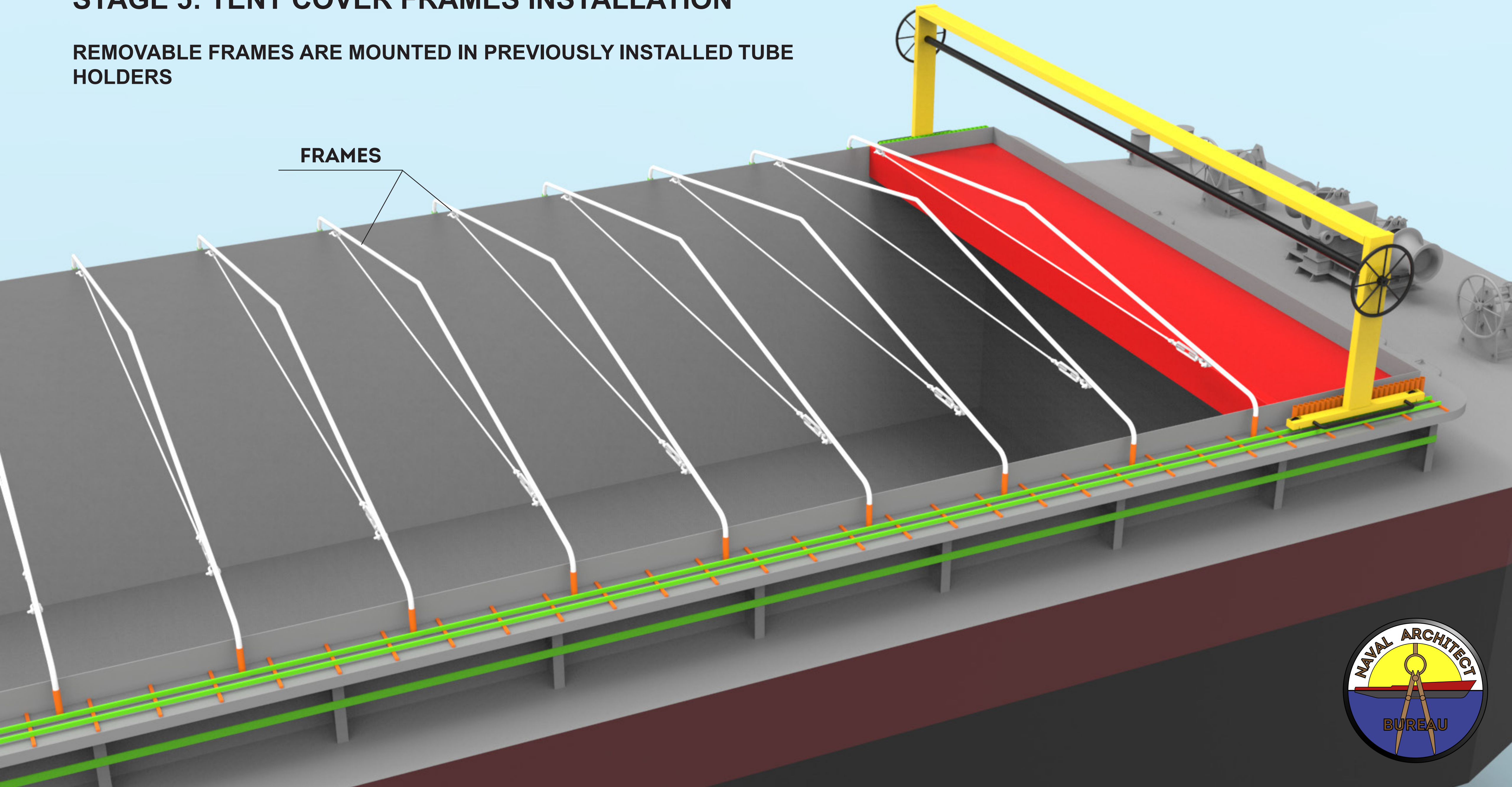
TUBE HOLDER



STAGE 5: TENT COVER FRAMES INSTALLATION

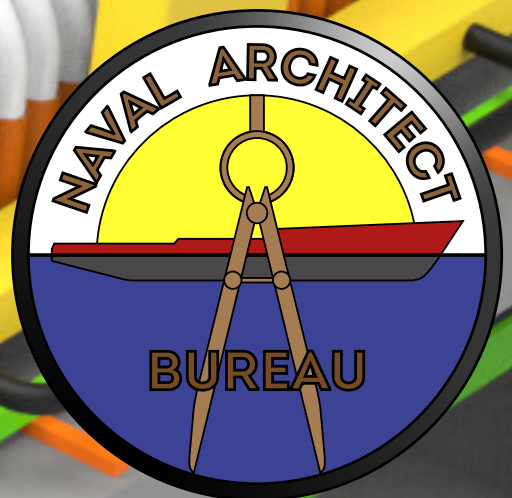
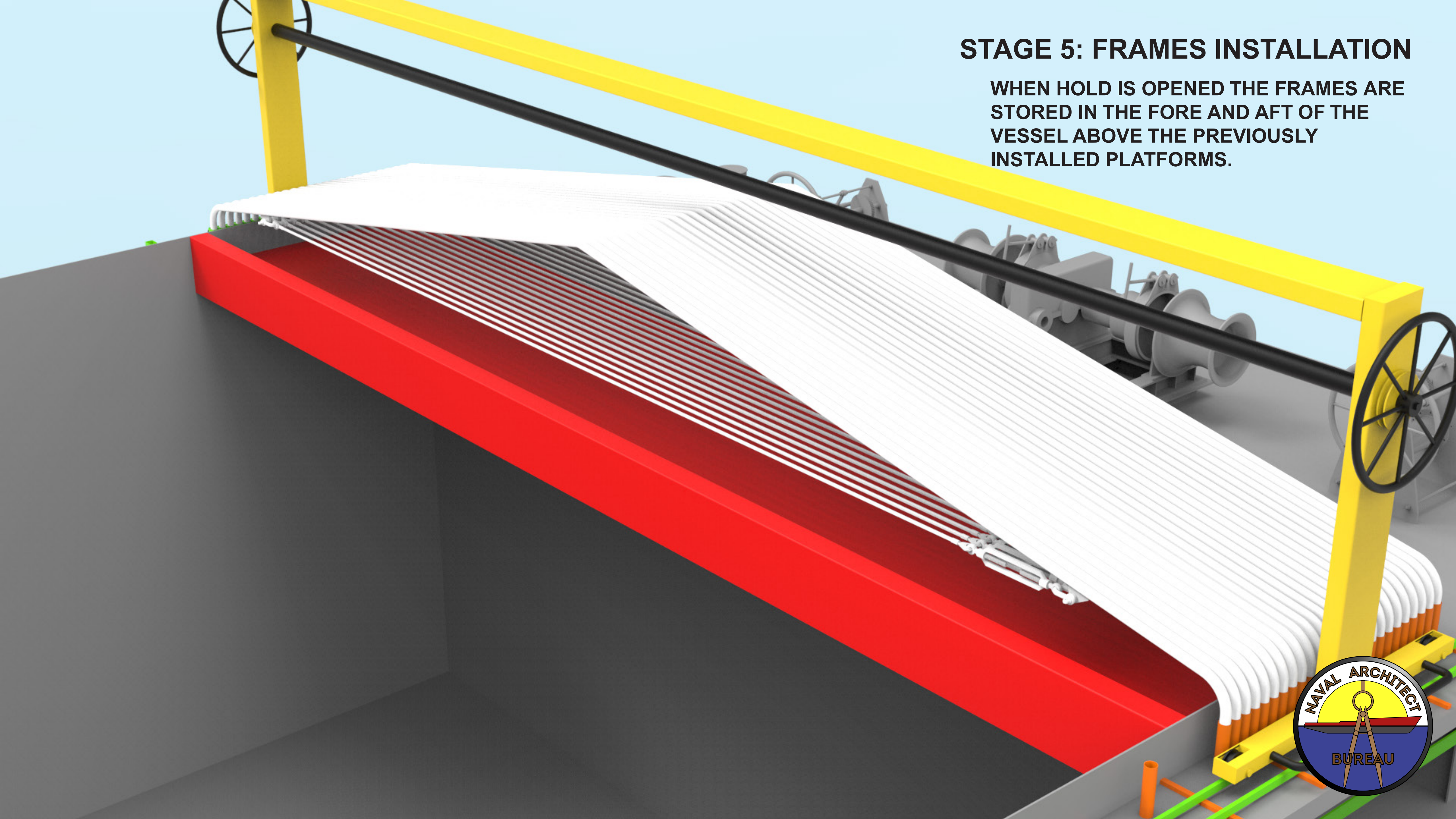
REMOVABLE FRAMES ARE MOUNTED IN PREVIOUSLY INSTALLED TUBE HOLDERS

FRAMES



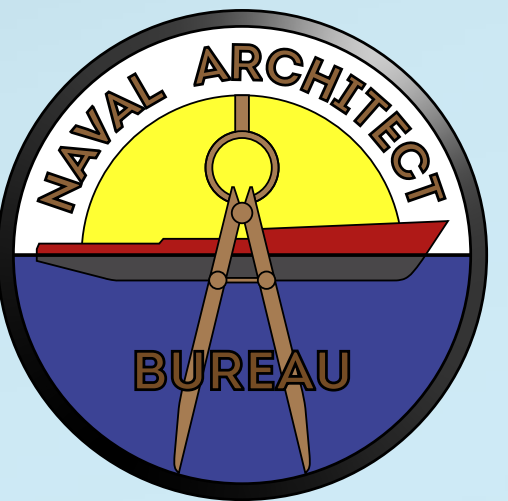
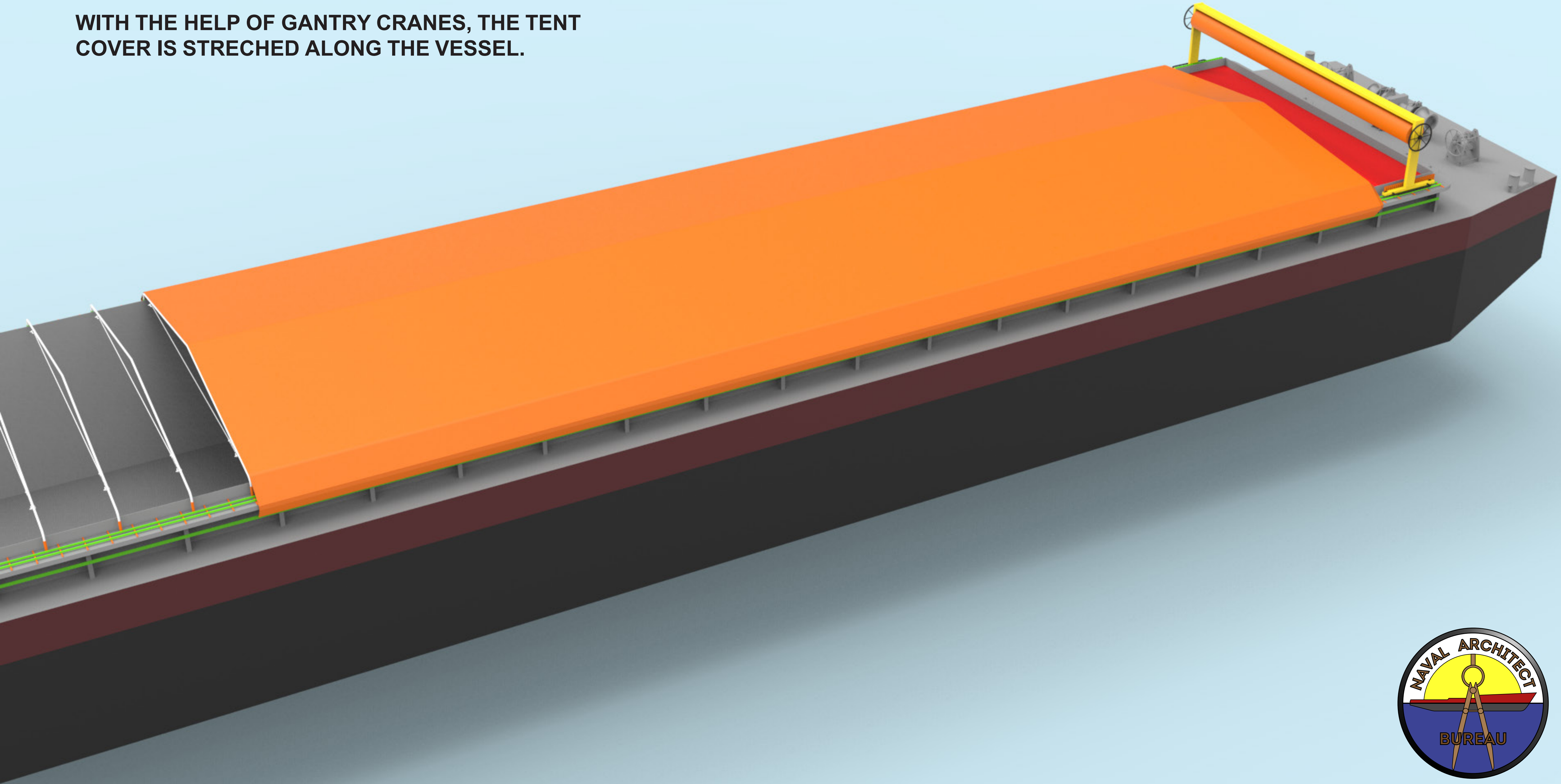
STAGE 5: FRAMES INSTALLATION

WHEN HOLD IS OPENED THE FRAMES ARE STORED IN THE FORE AND AFT OF THE VESSEL ABOVE THE PREVIOUSLY INSTALLED PLATFORMS.

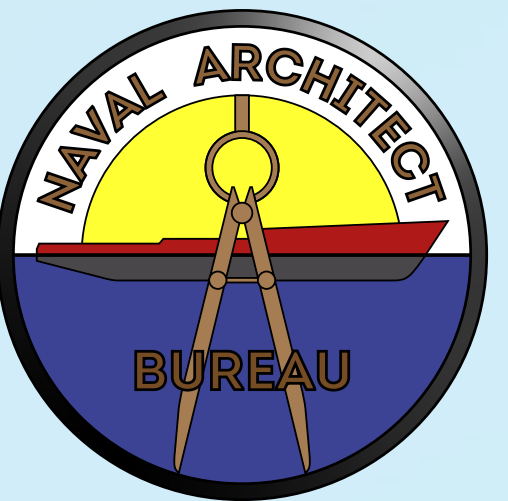
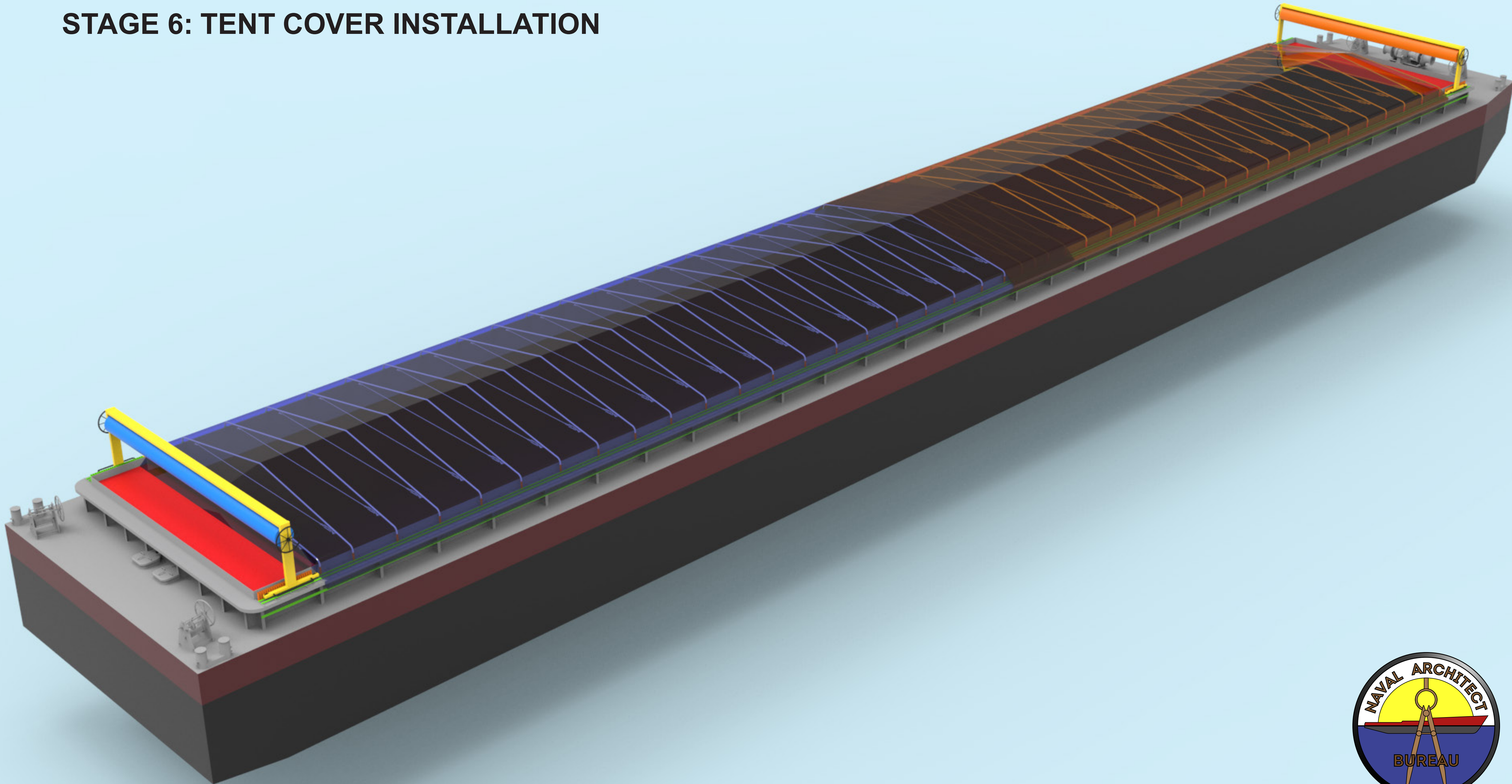


STAGE 6: TENT COVER INSTALLATION

WITH THE HELP OF GANTRY CRANES, THE TENT COVER IS STRETCHED ALONG THE VESSEL.

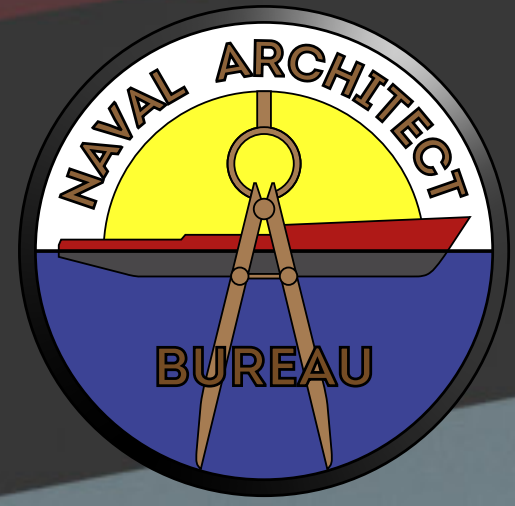
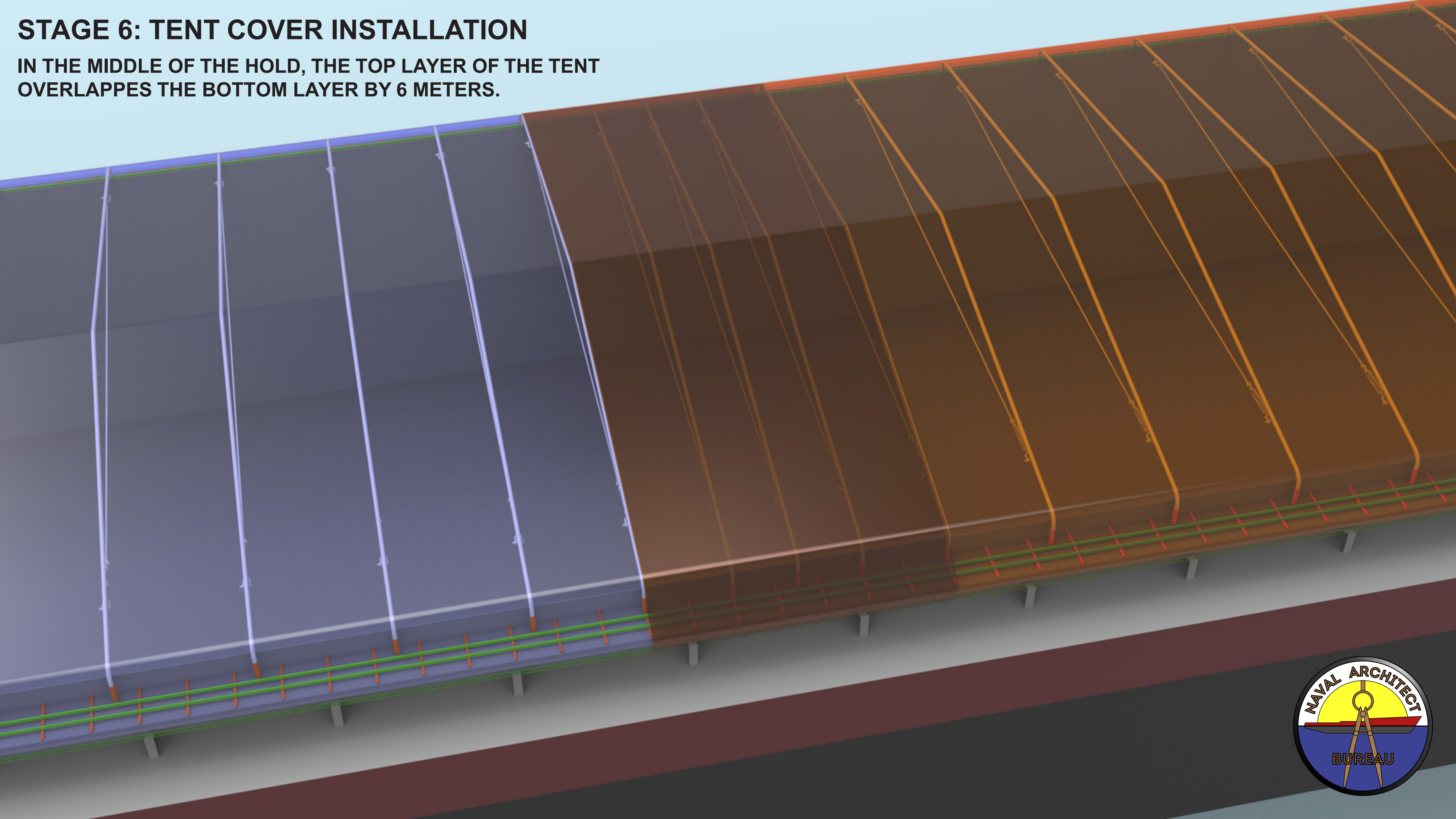


STAGE 6: TENT COVER INSTALLATION



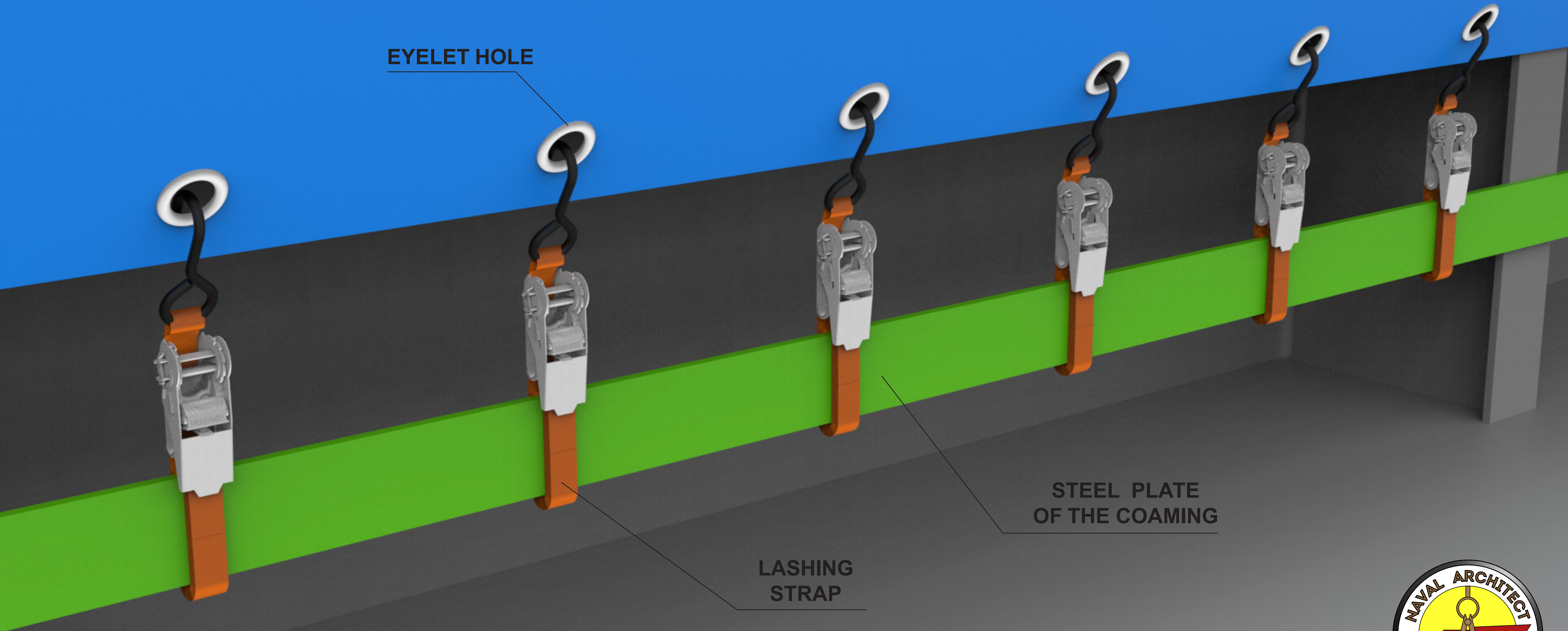
STAGE 6: TENT COVER INSTALLATION

IN THE MIDDLE OF THE HOLD, THE TOP LAYER OF THE TENT OVERLAPPEES THE BOTTOM LAYER BY 6 METERS.



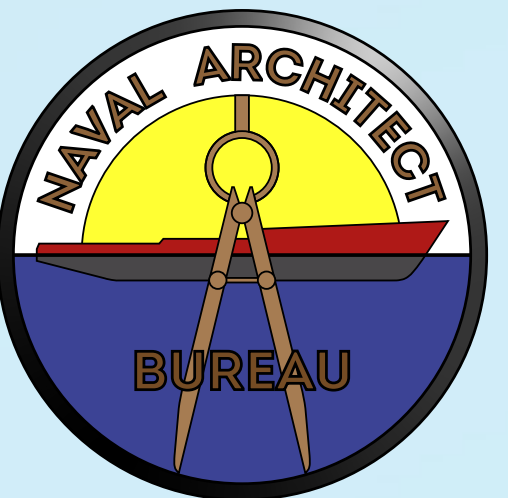
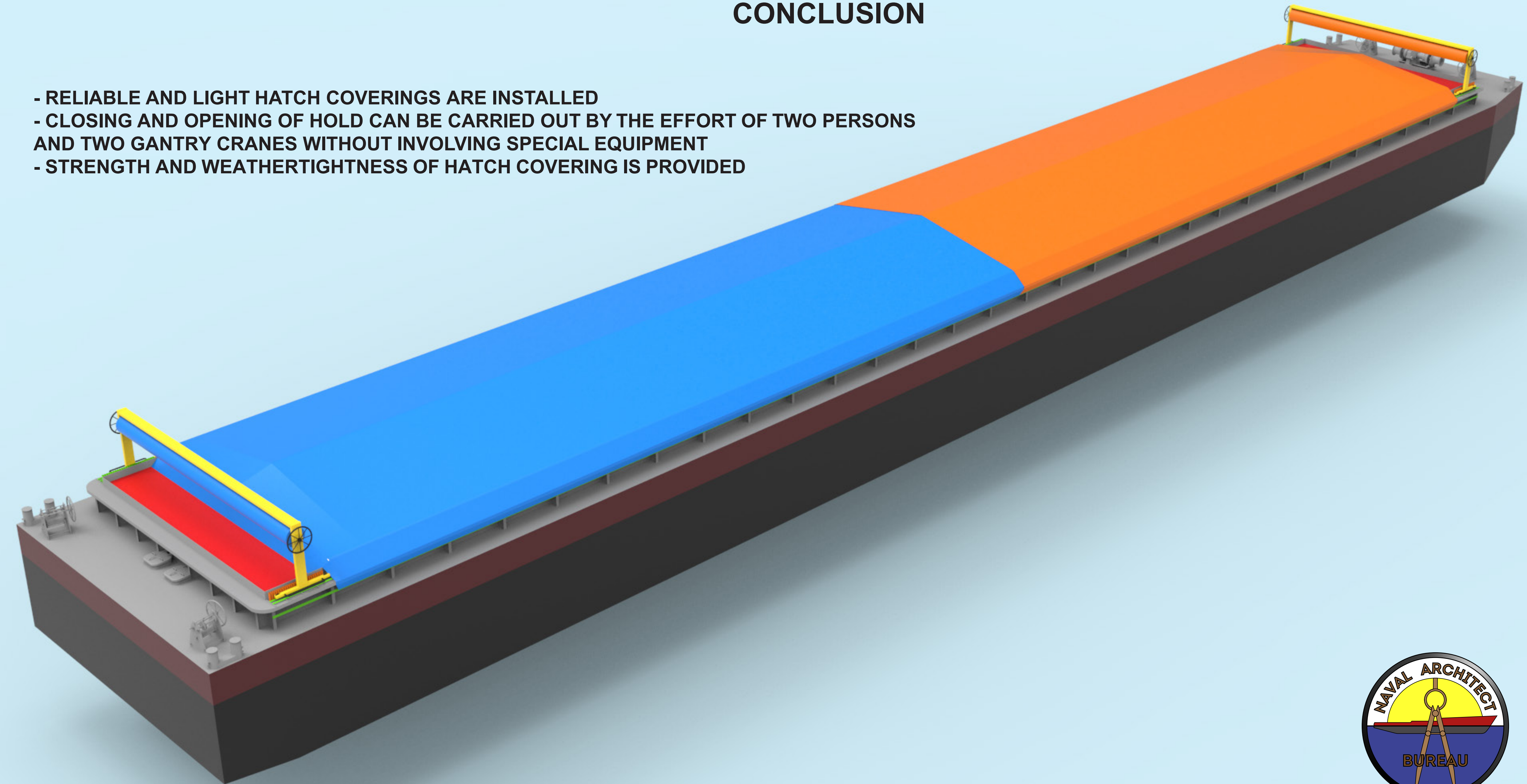
STAGE 7: FIXING OF THE TENT COVER

WITH THE HELP OF LASHING STRAPS AND BELTS THROUGH EYELET HOLE, THE TENT COVER IS ATTACHED TO THE VESSEL COMING. DISTANCE BETWEEN LASHING STRAPS IS 350 MM



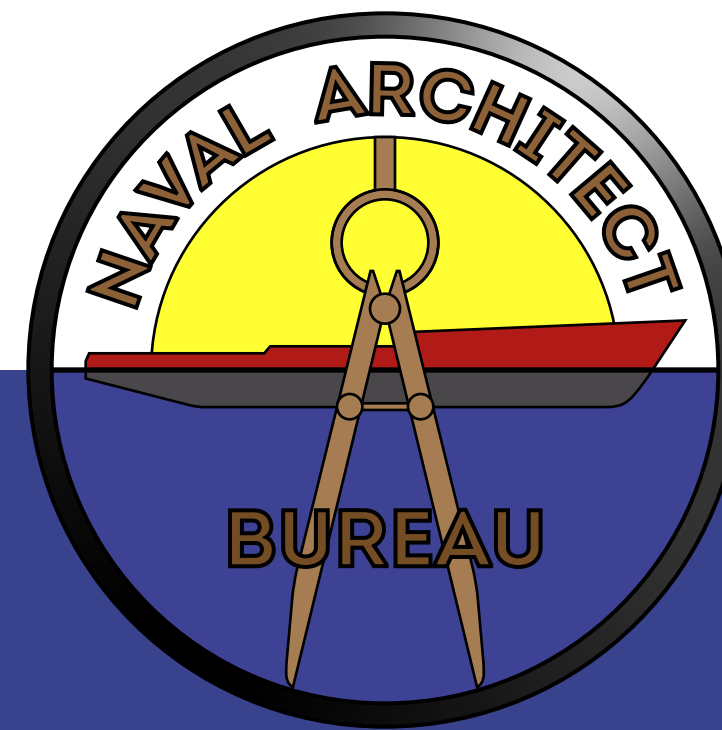
CONCLUSION

- RELIABLE AND LIGHT HATCH COVERINGS ARE INSTALLED
- CLOSING AND OPENING OF HOLD CAN BE CARRIED OUT BY THE EFFORT OF TWO PERSONS AND TWO GANTRY CRANES WITHOUT INVOLVING SPECIAL EQUIPMENT
- STRENGTH AND WEATHERTIGHTNESS OF HATCH COVERING IS PROVIDED



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