Successfully reusing early-phase design data

ExpressMarine Integration

Pat David SSIUSA

Business Technology Panel Meeting

MAY 21, 2020 - Virtual

VT Halter Marine

A company of VT Systems

EXPRESSMARINE

Parametric 3D Structural Modeling for Weight Estimation

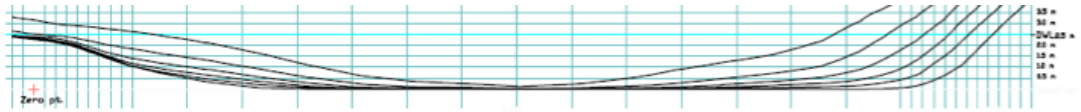
SSI®

EnterprisePlatform

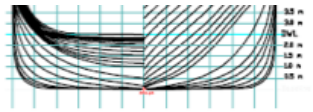
SHIPCONSTRUCTOR®

OBJECTIVE

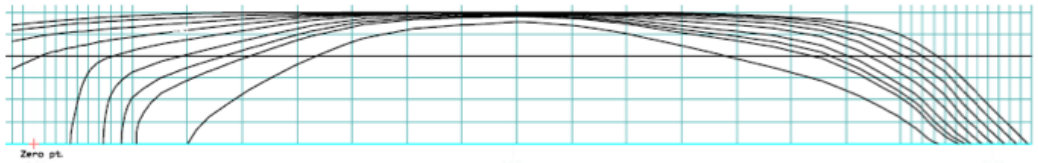
Pass rich, early phase structure-model to a detail-engineering production tool without losing properties and metadata (early stage design into detail production models).



PROFILE



HALF-BREATH PLAN



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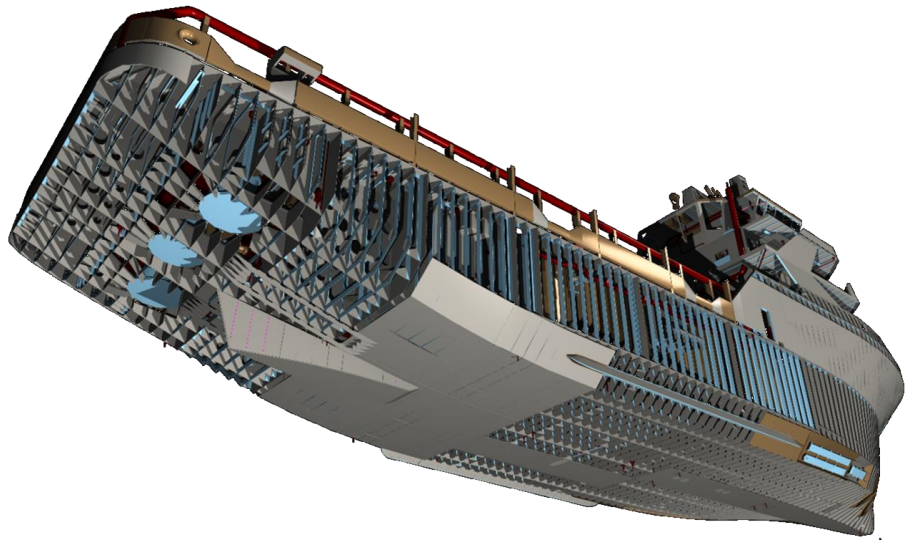
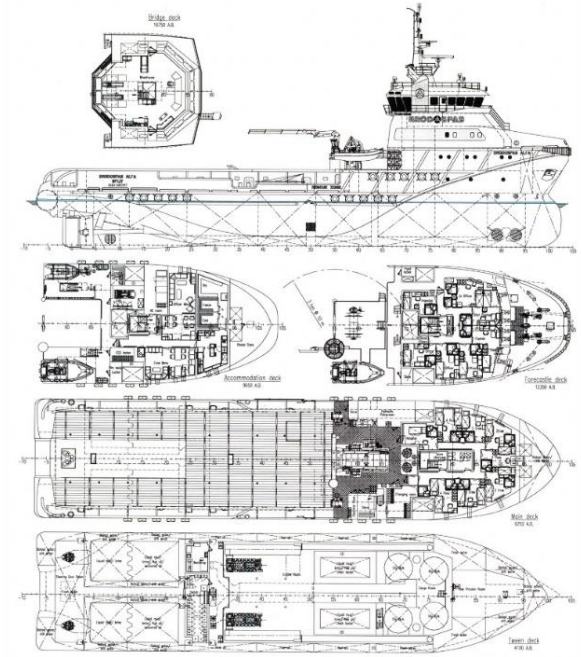
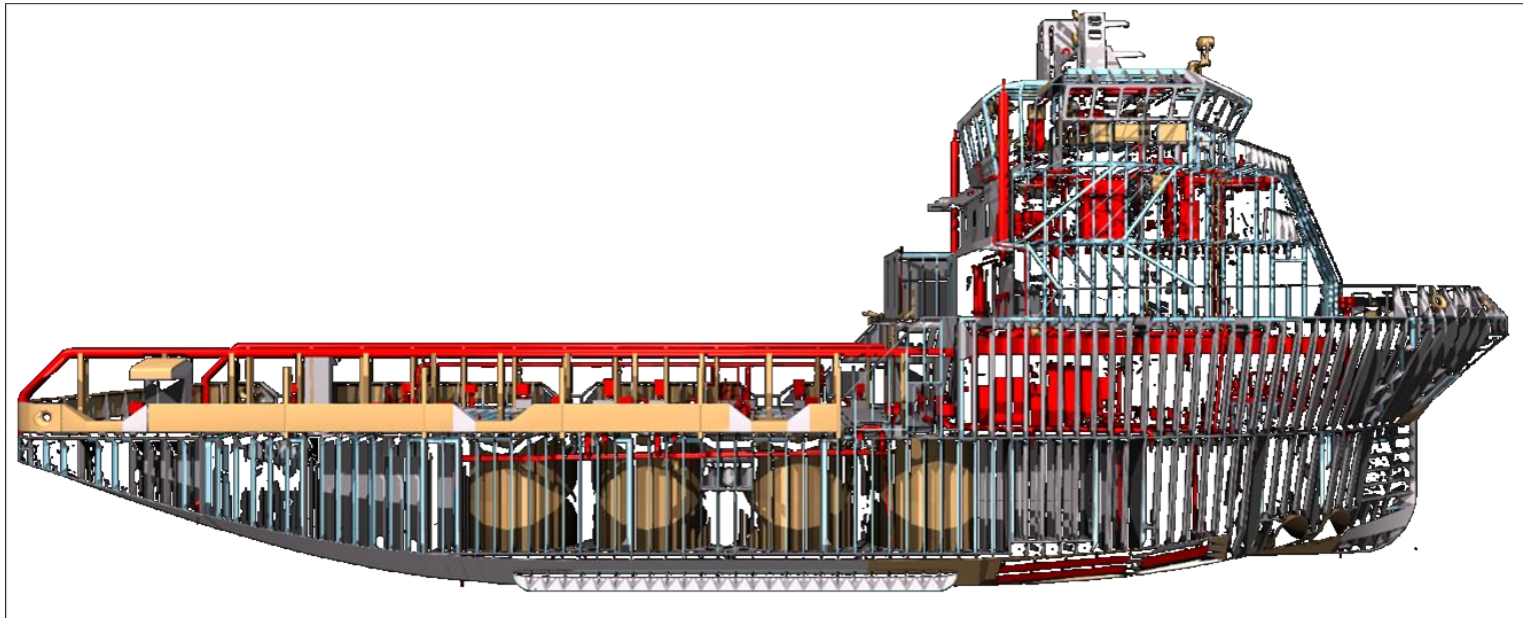


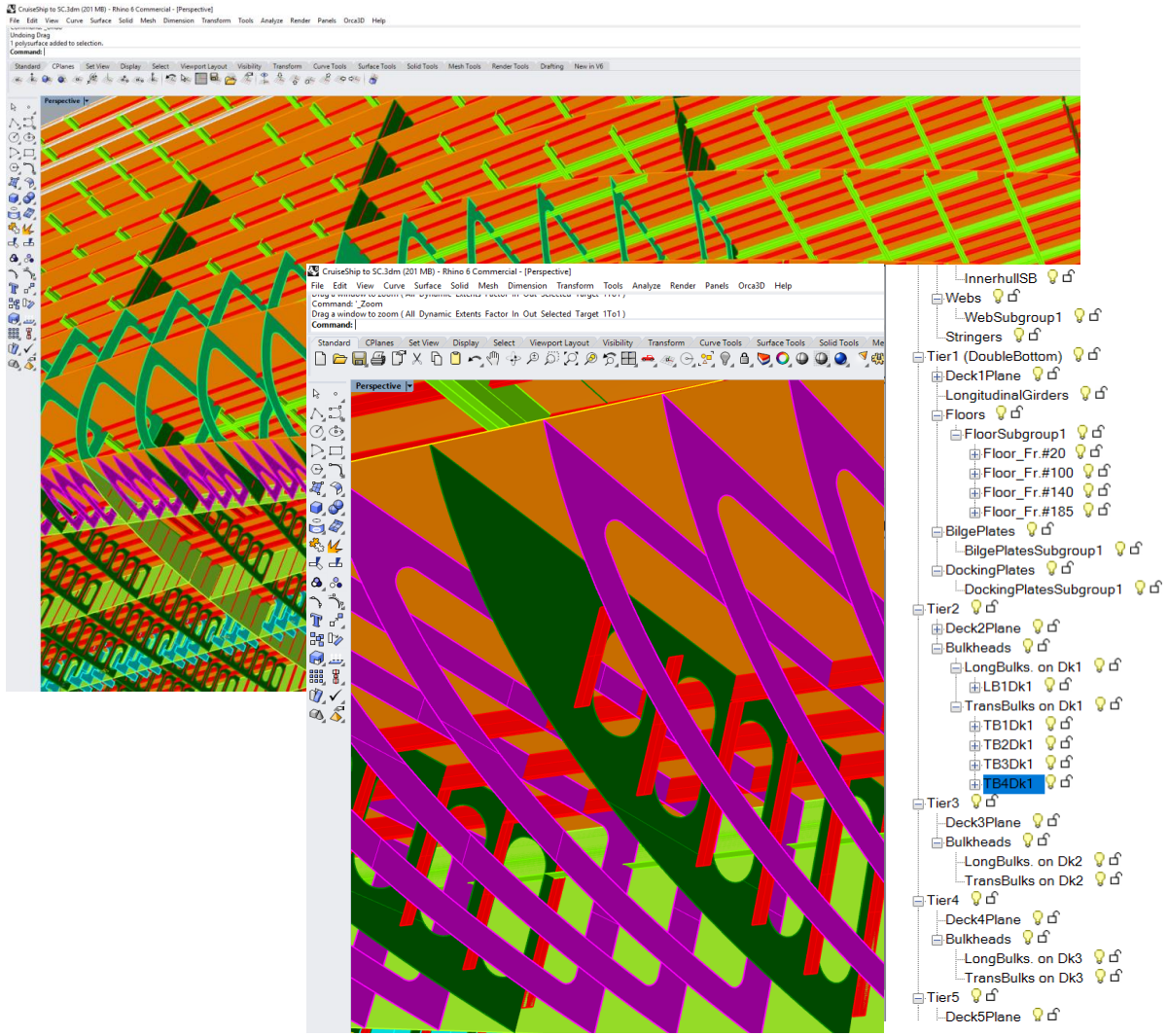
GOAL

Export the **ExpressMarine** model to **ShipConstructor** so the model appears as if it was built there natively





EXPRESSMARINE



ExpressMarine is a plug-in for **Rhino3D** that enables designers to rapidly build-up parametric 3D models of marine structures.

SOLUTION

> Leverage **SSI Genesis Connector** to enable *automatic creation* of **ShipConstructor** parts *complete with relevant properties and metadata*.

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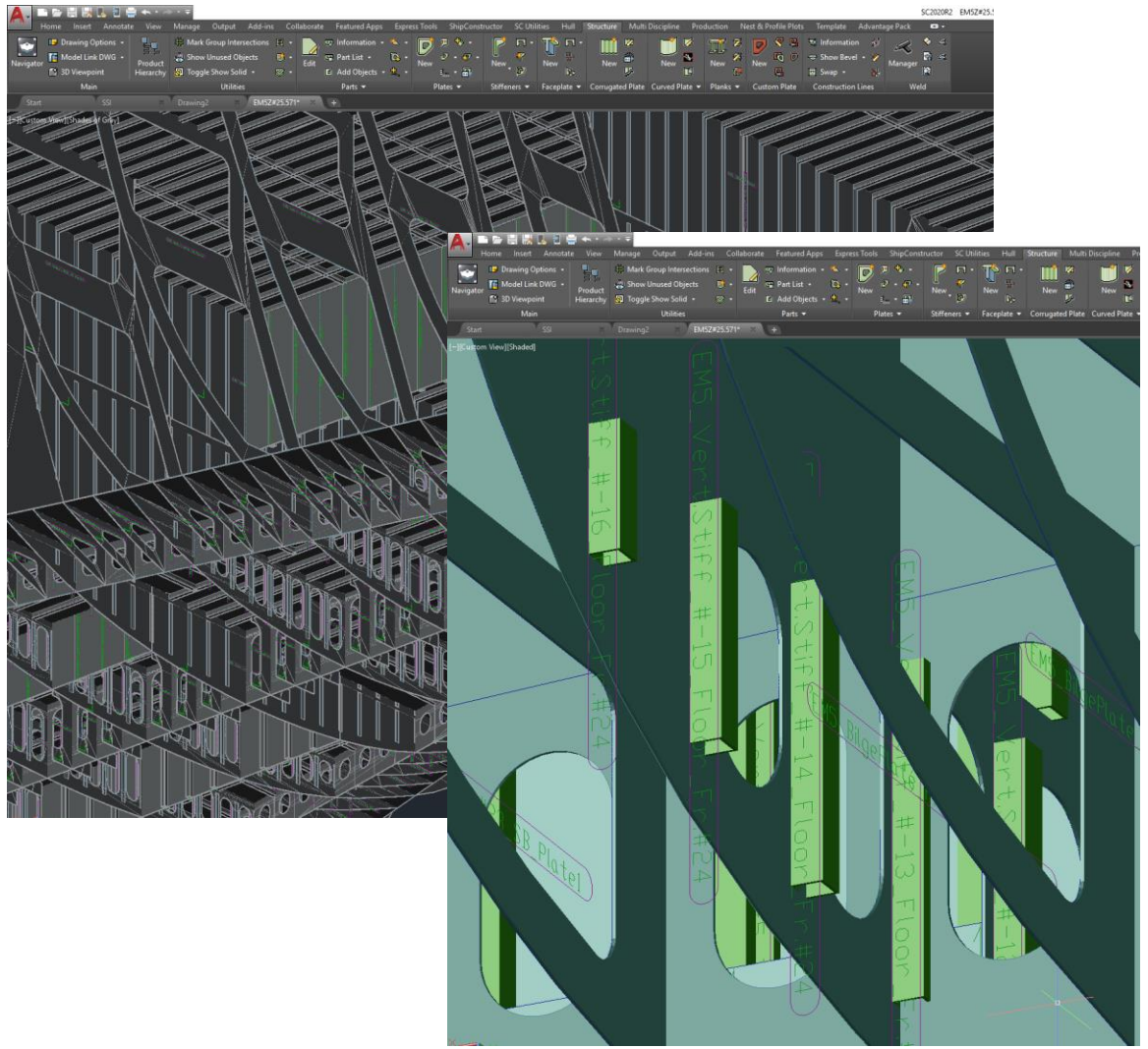


ShipConstructor is a complete detail-design engineering tool with a deeply integrated set of data and metadata.

SOLUTION

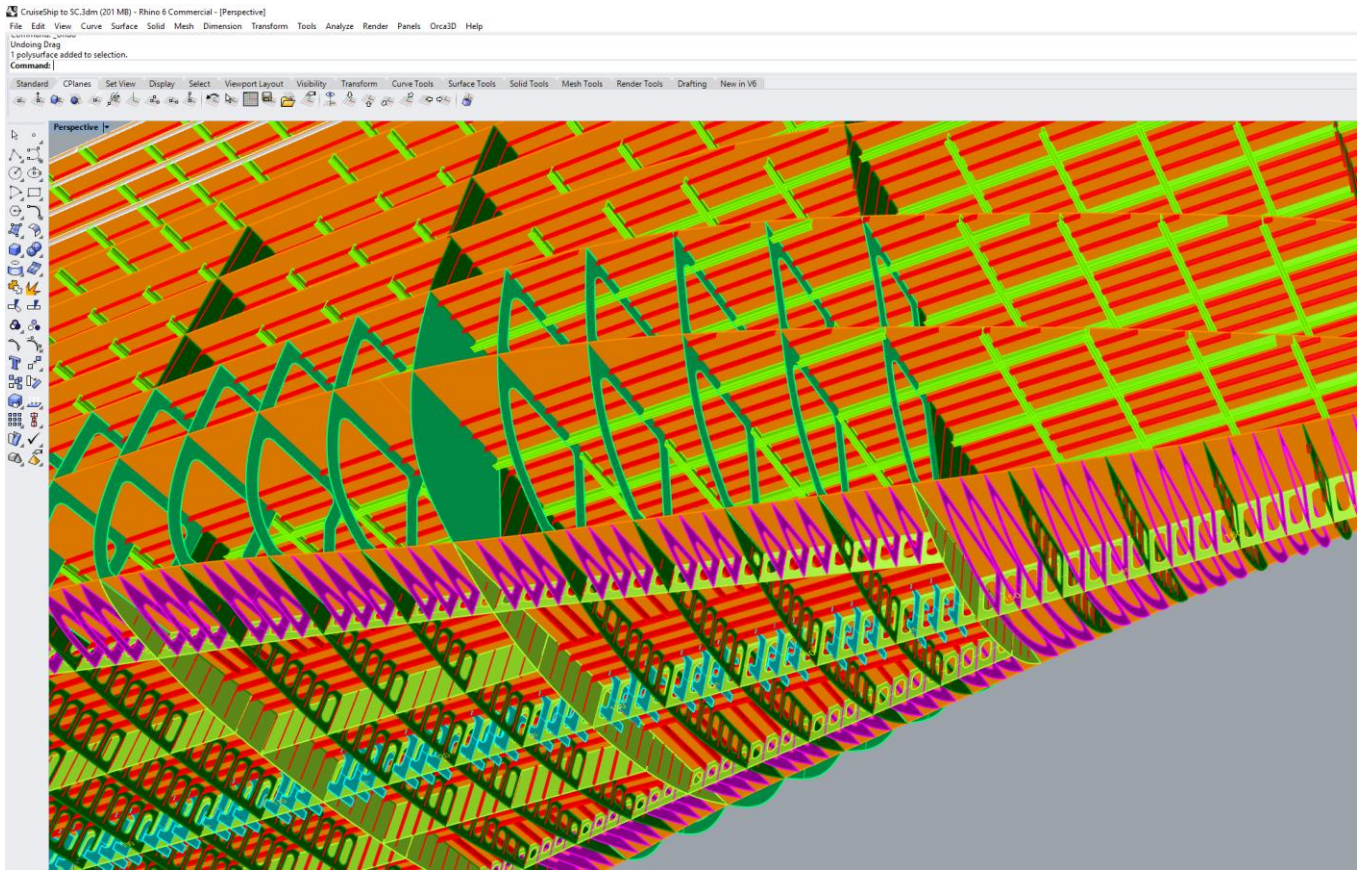
The **SSI Genesis Creation Framework** is an Application Programming Interface (API) for directly reading/writing to **ShipConstructor** projects.

SOLUTION

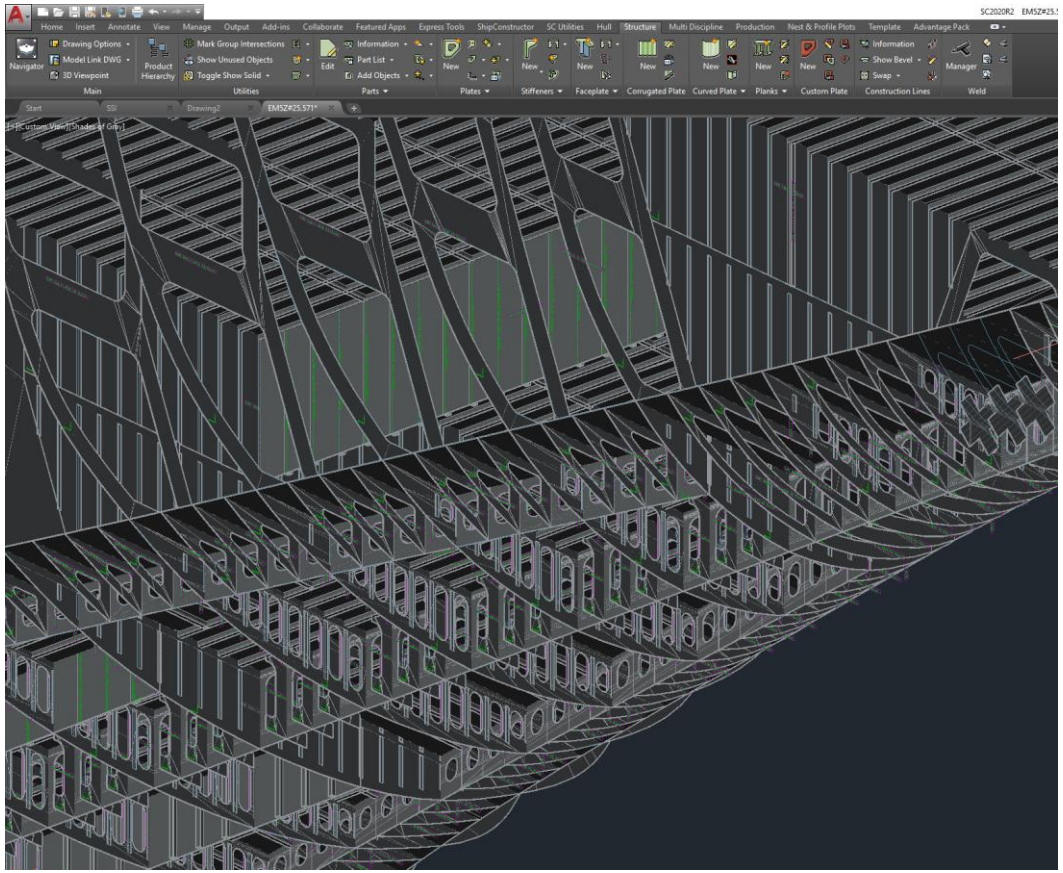
RESULTS

Success in automatically creating valid ShipConstructor parts and entities directly from the ExpressMarine model!

RESULTS



EXPRESSMARINE



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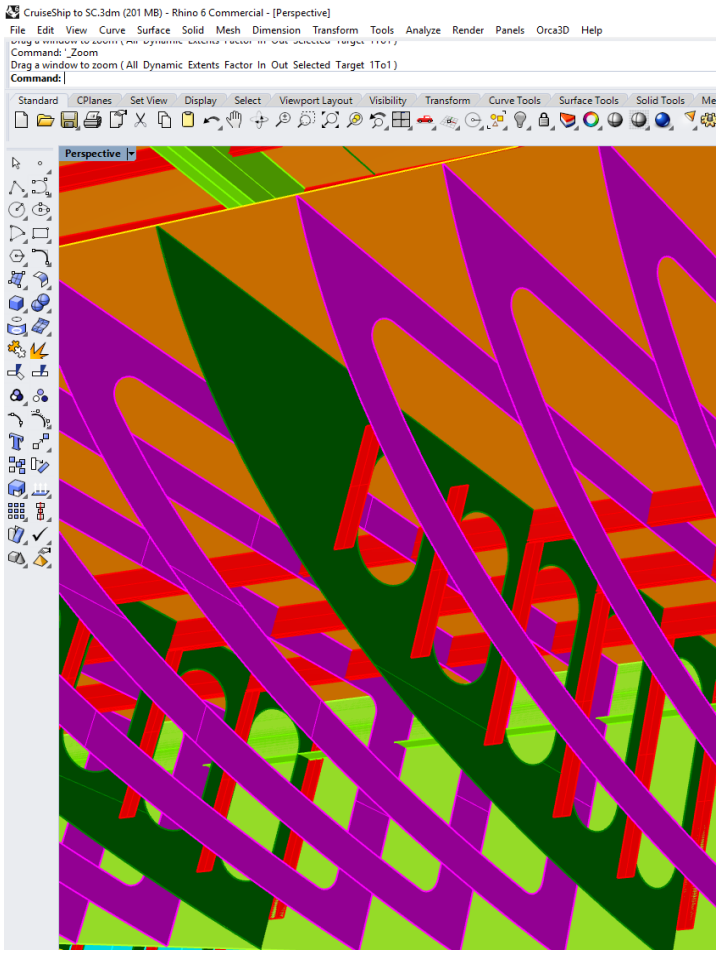
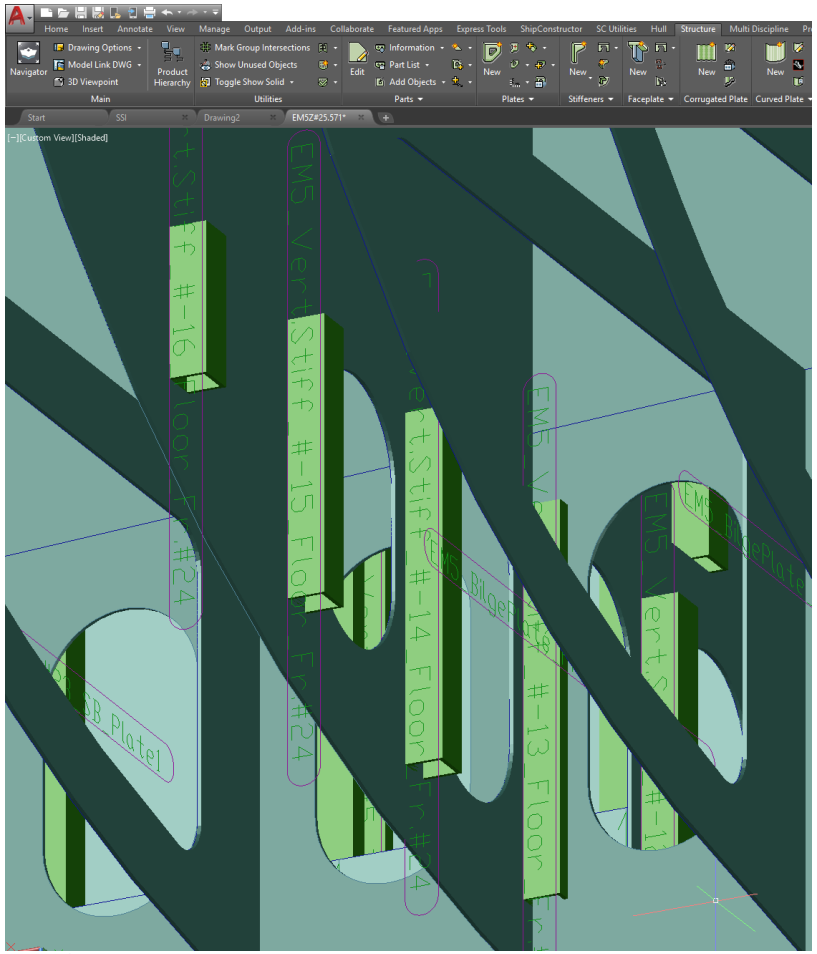
RESULTS



EXPRESSMARINE



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TASKS - STATUS

✓01	Conduct Project Kick-off Meeting	
✓02	ExpressMarine Training for VTHM, SSI	
✓03	Investigate potential ExpressMarine to ShipConstructor data mapping	
✓04	Capture business processes and workflow (VTHM & Austal USA)	
✓05	Develop and test data integration from ExpressMarine to ShipConstructor	
✓06	Demonstrate successful data integration	
✓07	Conduct Final Workshop	(March 2020)
✓08	Develop Final Report	(April 2020)

FINAL WORKSHOP

- Held March 19th, 2020
- Two more follow-up webinars on April 2nd, 2020

FINAL STATUS

ROI still demonstrates a 30:1 time savings vs. manually transitioning model

- ShipConstructor Modeling Times: **297 man hours**
  - Planar group & unit creation: 27 man hours
  - Hull module Work: 54 man hours
  - Structural modeling: 216 man hours
- ExpressMarine: **~10 man hours**

FINAL STATUS

Not simply a *"dumb"* geometry transfer

Bi-directional interface – ExpressMarine pulls data *directly* from ShipConstructor database (API)

FINAL STATUS

- **Final output identical to scratch-built ShipConstructor modelling**

- **Feedback and project accelerated SSI Genesis Creation Framework development**

FINAL STATUS

- Available NOW!
- Project results available in commercially released software

- ExpressMarine3D.com
- SSI-Corporate.com

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EXPRESSMARINE
Parametric 3D Structural Modeling for Weight Estimation

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VT Halter Marine
A company of VT Systems

AUSTAL