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# Newsletter

Fall 2009

**ShipConstructor**  
Software Inc.

## Offering Expertise To Industry



ShipConstructor Software Inc. is increasingly being consulted for its expertise in shipbuilding design and production.

"We are more than just software developers," says Darren Larkins, ShipConstructor's Deputy CEO. "Increasingly, we are advising industry, governments, and academia as to the most modern shipbuilding techniques."

ShipConstructor representatives have spent years analyzing the needs of design firms and shipyards around the world and have been called upon by the industry to collaborate on various development projects. As an active participant in the United States' National Shipbuilding Research Program (NSRP), ShipConstructor developed methods for enhancing Design for Production (DFP) in conjunction with shipbuilding leaders such as Northrop Grumman. ShipConstructor also spearheaded the SC4D peer to peer repository of shared equipment parts to reduce design and modeling time (see: <http://sc4d.shipconstructor.com/>).

Universities have enhanced their Marine Engineering and Naval Architecture programs by utilizing ShipConstructor's extensive educational materials. ShipConstructor's fully scalable curriculum leverages the company's understanding of the shipbuilding process, adding value from nomenclature & history, to providing lessons in utilizing advanced 3D design & modeling tools. Academic institutions with well-regarded shipbuilding programs such as Memorial University, the University of South

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## Talks With Brazilian Leaders

ShipConstructor in conjunction with its local affiliate, Sincronia, delivered a presentation to key figures in the Brazilian shipbuilding and offshore industry regarding best practices in detail design.



Representatives from Petrobras, Sinaval, ABIMAQ, the Brazilian Navy and UTC Engenharia were in attendance while officials from software, design and shipbuilding firms such as FormSys, INACE, Guido Perla and Estaleiro Atlântico Sul (EAS) also shared their experiences working with ShipConstructor's innovative technology.

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## Enhancing Design For Production

ShipConstructor has recently completed a series of meetings with US shipbuilders and design firms regarding methods for enhancing Design for Production (DFP).



These meetings have been part of a project funded by the National Shipbuilding Research Program (NSRP) involving Northrop Grumman (Avondale & Pascagoula), Bollinger Shipyards, Marinette Marine, VT Halter Marine and Genoa Design.

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## New Educational Resources

ShipConstructor Software Inc. (SSI), in conjunction with two universities, eight shipyards and five design firms, has created comprehensive college-level materials for the instruction of modern shipbuilding, design and modeling.



These educational resources have been developed in direct response to the stated needs of the shipbuilding industry and

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## Offering Expertise To Industry

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Alabama and the University of Wisconsin Marinette have worked with ShipConstructor to provide content for their courses and talks are underway with SNAME to set up an industry-wide certification program centered on this material.

Increasingly, ShipConstructor representatives have been asked to speak at conferences. Recently, a “who’s who” of Brazil’s top shipbuilding and offshore executives attended a symposium to learn about best practices in marine production.

ShipConstructor representatives such as Dr. Krishna Rao Adigopula and Dr. Oskar Lee have published numerous technical papers and ShipConstructor’s Deputy CEO, Darren Larkins, has given educational presentations in every major shipbuilding nation.

The Canadian Federal Government has requested input from ShipConstructor to help revitalize its shipbuilding and naval warship production industry. The company expects to play a key role by contributing to “Centers of Excellence” that the government has requested to provide guidance, expertise and innovation to the effort.

Around the world, from Europe to South Asia and from Canada to Australia, ShipConstructor maintains a network of highly trained Naval Architects and Marine Engineers who consult and advise each other as well as the industry to ensure that the right solution is applied to the right problem at the right time.



ShipConstructor Software’s Graham Chamberlain providing training



ShipConstructor Software’s Product Manager Justin Paquin inspecting work done at EAS

## Talks With Brazilian Leaders

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Ricardo Barcellos, Coordinator of Modeling for EAS, (the largest shipbuilder in the Southern Hemisphere), noted the importance of two critical factors affecting his company as well as others in the Brazilian market.

“We need the ability to train people quite quickly,” Barcellos said. “Since ShipConstructor software is based on the AutoCAD platform, drafters and designers can quickly learn on the job since the majority of them already know AutoCAD.”

Barcellos further added that the software’s seamless integration of engineering design with modern production practices is vital

Darren Larkins, ShipConstructor’s Deputy CEO explained how his company’s Associative DWG technology facilitates this linkage impressing industry officials. Representatives from ShipConstructor followed up the group presentation with individualized talks with several Brazilian companies, demonstrating the growing importance of ShipConstructor to Brazil.



## Enhancing Design For Production

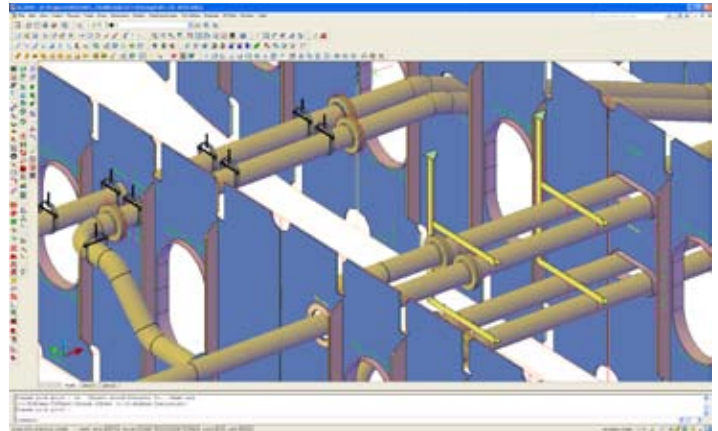
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The goal of DFP is to optimize design for efficient production; the team members identified two software functionalities as practical applications.

The first was the use of standard assemblies during the 3D modeling process. This would involve the creation of standard components that followed DFP principles. These components could then be reused anywhere within the model to ensure consistency.

The second functionality was a rule-based program for the creation of distributed systems supports. To optimize DFP, the supports for a ship's pipes and HVAC components (distributed systems) need to be designed in a specific way depending on the system's location, configuration and materials used. This is a complex task so a rule-based program would be of assistance.

Industry representatives have collaborated with ShipConstructor in the development of both identified functionalities which will be included in the upcoming ShipConstructor® 2009 software release.



Rule-based distributed systems supports (in yellow) are a practical application of DFP.

## Recent Naval and Coast Guard Projects

Building the world's most advanced ships requires innovation and cutting edge technology from design to production. More and more Naval and Coast Guard vessels are being detail designed with ShipConstructor software.

ShipConstructor began seeing use on naval projects in the USA and abroad in late 2002. This high profile market segment, once a stronghold of CATIA and Intergraph, is increasing dominated by projects designed and built entirely or in part with ShipConstructor products.

Some examples of projects recently completed or currently under construction include the Egyptian Navy's Ambassador Mark III Fast Missile Craft; the US Navy's first trimaran littoral combat ship, the USS Independence (LCS 2); the amphibious warship, USS America (LHA 6); the US Coast Guard's Sentinel Class (FRC-B) Fast Response Cutters as well as the National Security Cutters Bertholf, Waesche, Stratton and Hamilton.



**Ambassador MK III Fast Missile Craft**  
Designer: VT Halter Inc.  
Shipyard: VT Halter Inc.



**USS Independence (LCS 2)**  
Designer: Austal Australia  
Builder: Austal USA



**USS America (LHA 6)**  
Designer: Northrop Grumman  
Builder: Northrop Grumman



**Sentinel Class (FRC-B)**  
Designer: Bollinger Shipyards  
Builder: Bollinger Shipyards



**USCGC Bertholf (NSC)**  
Designer: Northrop Grumman  
Builder: Northrop Grumman

## New Educational Resources

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are designed to take students with a basic understanding of AutoCAD and provide them with the practical skills and essential knowledge needed to become modelers in a shipyard or marine design agency.

Included are lessons exposing learners to marine materials, classification societies, safety issues, shipbuilding terminology, fabrication strategies, shipyard production drawings and the principles of Design for Production (DFP).

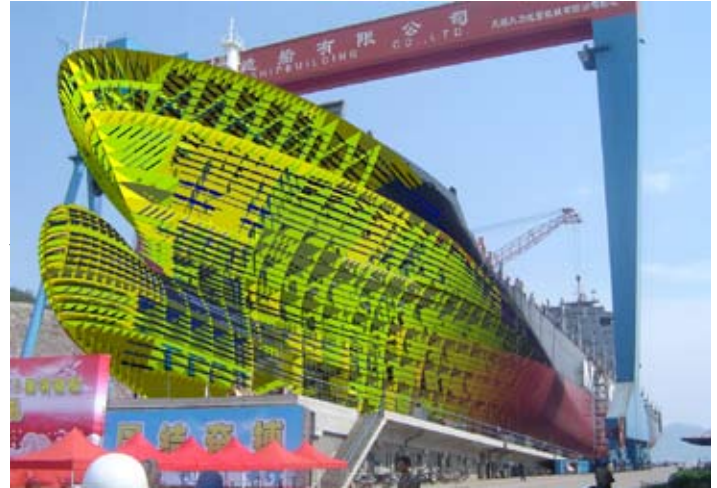
Activities focus on hands-on practice with students modeling structure, pipe, HVAC, electrical and equipment parts within ShipConstructor®, a 3D AutoCAD based marine design software program. The lessons also teach students how to create nest, assembly and spool drawings and other realistic production output. This hands-on experience, combined with theoretical knowledge ensures mastery of competencies requested by industry.

Graham Chamberlain, an experienced educator and former shipyard manager, coordinated the development of this educational package. Working with the University of Wisconsin (Marinette), the University of South Alabama, and the Worldwide Instructional Design System (WIDS), the stakeholders created a comprehensive set of learner centered modules that can easily be implemented by an educational institution.

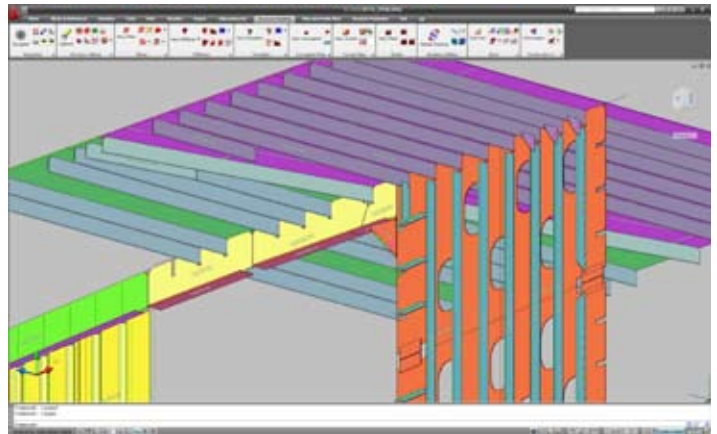
"Besides being practical, it is all completely 'turn-key' and pedagogically sound," Chamberlain says. "Everything an instructor needs for teaching, from lesson plans, to assessment, to learning objectives to instructional videos, interactive exercises, and 'train the trainer' materials, is included on a DVD. We even have experienced mentors available to help faculty implement this instructional material."

The material is scalable. There are five two-hour activities in 3D modeling which may be added onto existing AutoCAD training programs. However, the 5500 files, videos, links and lessons on the DVD may also be grouped together to form a series of courses.

ShipConstructor is currently working with a select number of educational institutions to help them integrate this resource into their curriculum and is accepting enquiries from interested colleges and universities who wish to provide practical hands-on instruction.



Structured learning decreases time needed to bring conception to reality



### Industry & Academic Institutions involved:

Bollinger Shipyards, Northrop Grumman, Austal USA, Bender Shipbuilding & Repair, VT Halter Marine, Manitowoc Marine Group, Todd Pacific Shipyard, Atlantic Marine, Art Anderson Associates, Murray & Associates, Genoa Design International, Elliot Bay Design Group, Gibbs & Cox, ShipConstructor Software Inc., Worldwide Instructional Design System, University of Wisconsin (Marinette), and the University of South Alabama.

## ShipConstructor chosen by SONAME

The Society of Naval Architects and Marine Engineers (SONAME) in the Philippines have chosen ShipConstructor® detail design software to be used in naval architecture training programs in their country.



Samuel Lim, President of SONAME, says his organization has purchased millions of pesos of software to share with educational institutions wishing to train more professionals in this discipline.

SONAME has recently signed a Memorandum of Understanding with the Asian Institute of Maritime Studies and hopes for other academic institutions to also offer this training.

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