This year, Elliott Bay Design Group (EBDG) celebrates its 30th anniversary. For three decades we have integrated naval architecture, marine engineering, analytics and design to deliver comprehensive solutions that meet the goals and objectives of our clients.

The company was established in 1988 when three partners, purchased the assets of Nickum & Spaulding Associates, Inc. - a naval architecture firm with a sixty-year history of quality marine design. Today, EBDG is an employee-owned enterprise with offices in Seattle, New Orleans and Ketchikan.

Throughout our history, we have serviced every major sector of the marine industry including private operators and vessel owners, public agencies, shipyards, civil engineering firms, and even law firms.

We are passionate about shipbuilding and ship operations, and continuously seek new ways to create innovative designs that integrate the two. Our extensive project portfolio spans a number of vessel types: barges, tugs, offshore vessels, ferries, passenger vessels, and workboats, and encompasses unique projects from lofting art installations and high-end yacht hulls to one-off service vessel designs and structures.

Few naval architectural and marine engineering firms can match our expansive vessel design experience.

**Milestones Along the Way**

While EBDG was built on the legacy of Nickum & Spaulding Associates, we established our own brand identity. Our founding partners wanted a name that would better reflect the firm’s overall approach to design, while paying homage to its origins. “We felt that the combination of a marine locale (Elliott Bay) with our passion (Design) and our collective approach (Group) made sense,” explains John Waterhouse, Principal in Charge and founding partner.

Once the name was established, work began, and vessels were designed. “One of our proudest moments is when we have the opportunity to ride on an EBDG-designed vessel,” says Brian King, Principal in Charge and Chief Engineer.

After Hurricane Katrina and the devastation that followed in the Gulf Coast, EBDG wanted to help. In 2006, we opened our New Orleans office with the goal of providing good jobs to local naval architecture and marine engineering talent and as a way to help our regional clients. Today the office stays busy assisting operators and shipyards across the Gulf Coast. “From the New Orleans office, we enjoy the ability to offer our Gulf Coast clients a local service which includes ease of access and immediate response,” says Keith Keller, Vice President and General Manager.

In 2007, EBDG was acquired by American Commercial Lines (ACL), Jeffersonville, IN. When global acquisition firm Platinum Equity purchased ACL in 2010, EBDG had the opportunity to become its own company again. That’s when almost two dozen EBDG employees purchased the company from ACL turning it into the fully employee-owned organization it is today.

In 2013, we looked north to Alaska and established our third location. Based in Ketchikan, AK, EBDG’s field office serves as the base of operations within the state. From this locale, EBDG supports clients operating within Alaska and provides a regional resource for quick response field engineering.
Our People are the Difference

EBDG’s strength lies in the depth and experience of our staff. Our designers and engineers are technically-capable and highly-motivated, dedicated to our clients success.

This year, in conjunction with our 30th anniversary, we are celebrating who we are with an ongoing social media campaign “Our people are the difference.” The social media posts highlight all of our employees, answering the simple question, “Why EBDG?”.

“In the naval architecture/marine engineering business, your ‘product’ is your people,” says Christina Villiott, EBDG Vice President of Sales & Marketing. “EBDG understands this and has built a team of professional engineers, designers and support staff whose common goal is to help our customers succeed. If you want to provide the best service in the marine industry, you must hire the best. And that is exactly what we do and why our people are the difference!”

Our staff members include Professional Engineers registered to practice in Alaska, California, Louisiana, Michigan, North Carolina, New York, Oregon, Texas, Virginia and Washington. We boast that our team has practical knowledge in vessel operations and shipyard experience, and possess a thorough working knowledge of construction practices. EBDG’s expertise goes beyond traditional naval architecture and marine engineering services and includes transportation analysis and studies, computational fluid dynamics (CFD), finite element analysis (FEA), cost estimating, and 3D modeling.

Ferry Experts

EBDG has been active in the area of passenger vessel design since our company’s origins in the late 1920s. Our experience and qualifications in this sector are second to none; there are more ferries in operation designed by EBDG than any other engineering firm in the nation. We have supported ferry operators in Alaska, British Columbia, California, Delaware, Florida, Illinois, Louisiana, Maine, Massachusetts, Michigan, Montana, New York, North Carolina, Ohio, Oregon, Texas, Washington, and Wisconsin.

Our designs include both single and double-ended ferries, cable and battery powered ferries, ferries with capacities ranging from 50 to 4500 passengers, and everything in between.

“If you want to provide the best service in the marine industry, you must hire the best. And that is exactly what we do and why our people are the difference.”

Aside from new design, our strong legacy of ferry vessel support for public and private operators includes repowerings and mid-life
refurbishments, structural, motions and stability analysis, efficiency studies, transportation and environmental studies, capital budgets and security improvements as well as incident response, construction liaison services, bid support, and contract negotiation assistance.

This year our engineers have been working on several major new ferry projects, including:

- 400 passenger ferry for Governors Island, NY
- 600 passenger/28 vehicle ferry for Miller Boat Line, OH
- 4,500 passenger ferry for Staten Island Ferry, NY
- 149 passenger/28 vehicle diesel-electric ferry for Texas Department of Transportation
- 300 passenger/40 vehicle ferry for North Carolina Department of Transportation

Beyond Ferries
Although our history is rich with ferry experience, our roots are much broader. EBDG has designed harbor tugs and ocean going barges, floating marine structures, fishing vessels, offshore supply vessels and a multitude of other vessels.

To complement our design and engineering projects, we offer extensive analysis services. We understand that the art and science of naval architecture reside within the controlling environments of vessel operations, regulations, shipyard capabilities, and economic objectives, and we use state-of-the-art technology to help our clients navigate these challenges.

Forefront of Green Design
With vessel owners and operators facing ever-stricter environmental regulations, EBDG has been in the forefront of designing practical solutions that incorporate greener technologies, while improving economic performance. “The future of the marine industry relies upon sustainable practices”, mentions Joe Pritting, EBDG President. “We encourage responsible practices that conserve energy, reduce waste and minimize pollution.” Some of our best practices include process and design innovation, propulsive efficiencies, and emission controls.

As the marine industry gains momentum towards Liquefied Natural Gas (LNG) powered vessels, EBDG has invested resources into the development of a fleet of LNG-fueled vessels. This includes an LNG-fueled tug that features an IMO Type C tank for primary fuel storage and provision for a portable Type C tank for extended transits. Designs have also been finalized for several LNG bunkering barges ranging in capacities from 2000cm to 8000cm.

Besides working on projects for alternative fuels, such as LNG, EBDG is looking even further to the future - exploring the use of hydrogen fuel cells and hybrid propulsion.
In 2015, we were selected by Sandia National Laboratories to take part in a team effort to determine the feasibility of hydrogen fuel cells in a zero-emission, high-speed ferry in San Francisco Bay. The project has the potential to drastically change marine transportation and improve vessel emissions.

EBDG is actively supporting Washington State Ferries’ transition to hybrid-electric power on the Jumbo Mark II Class of ferries. Earlier this year we prepared a hybrid system integration study to analyze the feasibility of modifying three Jumbo Mark II vessels to integrate battery power into the propulsion plant.

The study discussed the initial power and energy requirements for each route (Seattle to Bainbridge and Edmonds to Kingston), the sizing of the battery banks, new arrangements on the vessels, impacts to the existing system and life cycle cost analysis.

Results from the Jumbo Mark II study not only proved the feasibility and financial justification of the vessel conversion but highlighted several long-term benefits for Washington State Ferries and the impacted region. Benefits included zero-emission crossings on the proposed routes, major reductions in NOx and particulate emissions after the conversion and near elimination of diesel fuel consumption for the Jumbo Mark II vessels.

The study was triggered by the desire to reduce greenhouse gas (GHG) emissions from the ferry system to help meet Washington State’s targets for 2020 and beyond.

Preparing for the Next 30
As we look over the horizon, EBDG’s leaders are focusing on growth, stability and client retention. The next generation of our leaders are being trained and mentored by the senior management team. Although knowledge transfer is critical, our staff is encouraged to think out of the box and to provide creative, innovative engineering solutions.

As the industry evolves, so will EBDG.
NAVAL ARCHITECTURE
Concept, Preliminary & Contract Design
Functional Design
Design Study Reports & Feasibility Studies
Repower Design & Engineering
Vessel Conversion Engineering
Tonnage Support
Hull Development, Definition & Fairing
Structural Design & 3D Modeling

MARINE ENGINEERING
Shipboard Mechanical, Electrical & Piping Systems
HVAC Systems
Hydraulic Systems
Propulsion Installations
Stabilizer Systems
Conversions & Modifications
New Systems Design
Energy Audits & Emissions Inventories
Rudder & Steering Systems

SHIPYARD SERVICES
Production Support & Lofting
Production Planning & Build-Strategy Development
Regulatory Liaison
As-Built Survey & Drawings

ANALYSIS
Structural Analysis
Propulsion
Mooring, Station Keeping & Launch Calculations
Stability
Seakeeping & Hydrodynamics
Finite Element Analysis
Computational Fluid Dynamics

OWNER SERVICES
Dry-Docking Oversight
Vessel Overhalls & Repairs
Construction Cost Estimating
Owner Representation
Sea Trials & Delivery Support
Regulatory Liaison
Quality Assurance & Change Order Negotiation
Feasibility Studies
Bid Review & Support

ELECTRICAL
Preliminary & Detailed Design
Fault Current Analysis
Protective Device Coordination Studies
Voltage Drop Calculations
Integrated System Design