SECTION 4: Technical Ability

Kingfish Maine has extensive financial, design, technical, and operational ability within the company, both in Maine and in the parent company, The Kingfish Company in the Netherlands.

The Kingfish Company, parent of Kingfish Maine, Inc., presently operates a ~1,250 metric ton per year RAS aquaculture facility in Kats, Netherlands. The company has a mature operation, and is presently providing product to a number of customers and markets. The company has scientific, engineering, and management expertise capable of developing the equivalent operations in the new facility to include maintenance of broodstock, hatchery operations, specialty food production, grow-out, harvesting and processing functions.

Operational staff in the US will include a management team and operations specialists, overseeing a projected 100 person staff. This Kingfish team has many years' experience in aquaculture and facility construction. Details of Kingfish's proficiency and innovation are documented in this submission. Additional information is available at the company website at: https://www.the-kingfish-company.com/about.

Kingfish Maine has secured legal, technical, design, and construction expertise from consultants in the US and Europe to assist it in developing the facility design. The design team assembled to collaborate on the project includes members of the European team that constructed the present Kingfish facility. Additionally, a US based team of construction experts and licensed professional designers has been engaged to identify, prepare, and develop the site and to operate the facility. Kingfish and these design teams have the experience and ability to develop and deliver projects of this scale. Kingfish has ensured that the multiple disciplines necessary to comply with all provisions of licensing and permitting are available to support the proposal.

Appended to this section are profiles and resumes for Kingfish and consultants.

APPENDIX 4A

Company Specific Profiles

KINGFISH
MAINE

The team behind the Dutch Yellowtail

The founders of The Kingfish Company, Ohad Maiman, former VP of the Merhav Group, Kees Kloet of Silt Farm, and Hans den Bieman, Director of Sealand and former CEO of Marine Harvest, bring a unique and complimentary combination of hands-on Yellowtail farming, senior management in the Aquaculture field, and a diverse project development background. In addition, with their proven track records in team development, senior management of Kingfish Maine has built a team with global experience and expertise in the areas of aquaculture operations, facility development, and construction.

Ohad Maiman

CEO

In his former position as VP Business Development at the Merhav Group, Mr. Maiman has had the opportunity to evaluate, develop, and manage multiple operations in the Oil & Gas, Petrochemical, Water treatment and Agricultural industries, and that was where he first encountered the land based aquaculture sector. Impressed by the potential of the nascent field, Mr. Maiman left his former position and dedicated himself to study the opportunity in depth, culminating in the founding and launch of Kingfish Zeeland in 2015. Graduated from Columbia University in 2003.

- Core Competencies: Team Development in startup and scale up, Team Development in multi-agency projects, Project Financing and Permitting, Business Development, Government relations, Market Analysis, Product Development, and Sales
- Key Roles:
  - Founder/CEO- The Kingfish Company:
    A sector leader in RAS farming of high value marine seafood, operating in the EU and developing in the US.
  - Vice president of Business Development- "Merhav Group of companies":
    Israeli investment and project development company, with over $5B in projects under execution.
  - Founder/CEO- AMOS TV: a sector leader in HD ambient content, NYC.

KINGFISH
MAINE

Kees Kloet

Chief Operating Officer

Mr. Kloet is a pioneer in the Land Based field and the first to build and operate a Yellowtail Kingfish RAS farm(Silt BV). He was involved in the start-up of approximately 30 RAS fish farms worldwide, and responsible for the training of staff and for the first production of a range of different species. In 1993, he also co-founded and served as the commercial director at Coppens International BV. Mr. Kloet holds a Masters in Aquaculture (Msc) from Wageningen University.

- Core Competencies: Aquaculture start up and scale up projects; Team Development and Training, New species development in aquaculture, Economics, Aquaculture System Design and Construction, Recirculating Aquaculture Facility Development, Aquaculture Feeds
- Key Roles:
  - Kingfish Zeeland BV, Kats, The Netherlands
    COO (co-founder)
  - SILT BV, Kingfish producer in RAS, IJmuiden, Holland
    General manager (co-founder)
  - Pilot RAS unit for Yellowtail Kingfish
  - Project leader / initiator of innovation project "Fork to Farm"
    First development for Kingfish farming in RAS; Import of the first batches of Kingfish into Europe.
  - Independent Aquaculture Consultant
    System design and construction / feasibility studies; Training / technical support; RAS-farms (fresh- and seawater); Interim-management RAS-farms; Trouble-shooting RAS-farms
  - Zeeland Vis BV, turbot producer in RAS
    General manager
  - Fish Farm Yerseke BV, turbot producer
    General manager (co-founder)
  - Hesy Aquaculture BV, producer and supplier of RAS
    Account Manager
  - Coppens International BV, trade company (fish)feeds.
    (Sales/export) manager (co-founder)
  - Provimi BV, producer of feed specialties
    Technical/commercial employee fish feeds

KINGFISH
MAINE

Sune Moeller

Head of Construction

Mr. Moeller have throughout his whole career worked on large capital investment projects within different industries and in different capacities. He has spent four years with Billund Aquaculture, prior to starting with Kingfish Zeeland, where he did engineering and project management for large smolt and grow-out salmon farms. These fish farmers were built by Customers such as SalMar and Atlantic Sapphire in both Europe and North America. Mr. Moeller has brought in thorough experience with innovative solutions along with an in-depth technical understanding of RAS systems from his time at Billund Aquaculture. This has enabled a continued development and optimization of the existing farming concept and processes.

- Core Competencies: Aquaculture start up and scale up projects; Team Development and Training, New species development in aquaculture, Economics, Aquaculture System Design and Construction, Recirculating Aquaculture Facility Development, Aquaculture Feeds
- Key Roles:

- Kingfish Zeeland
  Head of Construction
- Billund Aquaculture
  Snr. Project Manager
- Billund Aquaculture
  Project Manager & Engineer
- Topteam ApS
  Consulting Project Manager
- Arla Foods PLC
  Project Manager & Engineer
- Arla Foods PLC
  Mechanical Engineer Internship

KINGFISH
MAINE

Megan Sorby

Development Manager

Megan has worked in the aquaculture industry over 10 years. Megan has focused on facility development and new technologies for alternative species. Expertise in broodstock and procedural development, system design and water chemistry and proven success in facility planning and permitting. Megan holds a Master's in Sustainable Aquaculture, with focuses in Marine Biology and Chemistry.

- Core Competencies: New species procedural development, System design and facility development for alternative species, Permitting and compliance, Breeding stock development, Operational execution from hatchery to processing, Team training development
- Key Roles:

- Kingfish Maine
  Development Manager
- True Blue Aqua
  Aquaculture Consultant
- Sammy's Seafood
  Sales and Aquaculture Product Review
- Golden Eagle Sablefish
  Hatchery Manager
- Troutlodge Marine
  Hatchery Manager
- Australis Aquaculture
  Lead Chemist, Lab Supervisor
- University of Miami Aplysia Resource Facility
  Invertebrate culturist, aplysia, queen conch, urchins
- Cardno Entrix
  Oil spill response team, sampling and chain of custody tracking

KINGFISH
MAINE

Tom Sorby

Operations Manager

Tom has spent many years in the aquaculture industry between the US and Canada and has focused on the development of new species with proven success in this area. With expertise in system design and operation as well as larval rearing. Tom enjoys figuring out creative solutions for overcoming difficulties in the fish rearing process. He obtained a master's degree in Sustainable Aquaculture from the University of Stirling.

- Core Competencies: Aquaculture facility development for alternative species, Protocol development and team building, Larval rearing and growout operations, Fish health permitting, reporting, and compliance, Farm stock management and facilities maintenance tracking software implementation
- Key Roles:

- Kingfish Maine
  Operations Manager
- True Blue Aqua
  Aquaculture Consultant
- Golden Eagle Sablefish
  Hatchery Manager
- Sablefish Canada
  Production Manager
- Troutlodge Marine
  Hatchery Manager
- Australis Aquaculture
  Juvenile Production Manager
- Marine Biotech
  System Design and Installation
- Environment Agency
  Fisheries Surveyor

KINGFISH
MAINE

Skip Perry

US Construction

Mr. Perry is an accomplished Project Manager serving clients nation wide since 1989 in a variety of design and construction roles. Skip is well versed in all phases of design and construction from corporate level project planning and implementation to overseeing a local jobsite. Mr. Perry is particularly proud of the safety records on his projects since August of 2013 where there have been zero hours of lost time due to workplace injury.

- Core Competencies: Construction Management, Scope development, Scheduling, and risk analysis, Field supervision and OSHA Safety Trainer/Representative, External Team Coordination, Construction Methodology and Logistics
- Key Roles:

- Kingfish Maine
  US Construction Team
- Faithful & Gould
  Senior Project Manager, Owner's Representative
- WJ Perry and Co, Inc
  Owner, Consultant, Project Manager
- Face Construction Technology
  Manager of Technical Services, Trainer, Consultant, Project Engineer
- Varian Semiconductor Equipment
  Mechanical Component Engineer
- Varian Semiconductor Equipment
  Quality Control Supervisor

KINGFISH
MAINE

Billund Aquaculture

Technology & Engineering

With a large and well documented reference list and more than 27 years of experience in design, installations, operation and service of intensive re-circulation fish farms, Billund has consistently delivered successful systems. Billund has been chosen by management as the lead contractor for the design, build and commissioning of the Kingfish Zeeland farm.

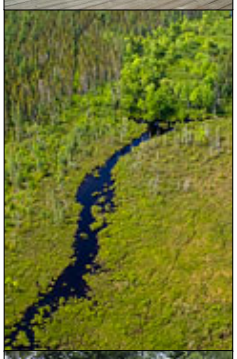
- Billund Aquaculture has been a key design partner with The Kingfish Company since inception. They will continue to play the role of lead RAS designer on the Kingfish Maine project. They have global success and proven track record well beyond what is demonstrated in The Kingfish Company.
- Reference List:

Baltic Fish Company	Kaliningrad, Russia	Salmon Grow-Out	RAS Facility	3.000 tons/year	DC 2019
Laksefjord AS, Tog 2,2	Norway	Salmon Post-Smolt	RAS Facility	500 gram	UC 2019
Lerøy Belsvik, Step 2	Norway	Salmon Post-Smolt	RAS Facility	700 gram	DC 2019
Villa Smolt AS	Norway	Salmon Smolt	Smolt Facility	150 gram Smolt	UC 2019
Zehui Aquaculture	China	Eel	RAS Facility	13.000 tons	DC 2019
BioMar	Denmark	Marine Species	RAS Facility for R&D	-	2018
Laksefjord AS, Tog 2,1	Norway	Salmon Post-Smolt	RAS Facility	500 gram	UC 2019
Finnmark Rensefisk AS	Norway	Lumpfish	RAS Facility	Confidential	DC 2018
Salmones Camanchaca	Chile	Salmon Parr	RAS Facility	Confidential	UC 2018
Aquagen	Chile	Salmon Broodstock	RAS Facility	Confidential	UC 2018
Nova Austral	Chile	Salmon Smolt	Smolt Facility	10 million, 120 gram, 4 batch	UC 2018
Atlantic Sapphire – Step 2	Denmark	Salmon	Grow-out facility	Confidential	2018
Huon Aquaculture	Tasmania	Salmon	Post-Smolt Facility	1,6 million, 600 gram	2019
Aqua Pri	Vejen, Denmark	Pike perch	40 ft container for Broodstock	Confidential	2017
Finnforel	Finland	Trout	Grow-out facility	1.000 tons, 2,5 kg	2017
Kingfish Zeeland	The Netherlands	Yellowtail Kingfish	Grow-out facility	500 tons, 4 kg	2017
Scottish Sea Farms	Scotland	Salmon Smolt	Smolt Facility	12 million, 120 gram	UC 2019
Invermar	Chile	Salmon Smolt	Smolt Facility	4 million, 100 gram, 4 batch	2016
Sentinel Int. Shelf Company Ltd	South Africa	Salmon	Grow-out facility	1.000 tons, 5 kg salmon	DC 2016
Atlantic Sapphire	Florida, USA	Salmon	Grow-out facility	8.000 tons, 5 kg salmon	DC 2016
Emergent Aquaculture	Indiana, USA	Eel	Eel farm facility	1.000 tons	DC 2015
Salmones Camanchaca S.A	Puerto Montt, Chile	Salmon	Rebuilding smolt facility	Confidential	2016
EWOS Innovation	Chile	Fresh- & Seawater	R&D Test facility	Confidential	2016
Biomar	Hirtshals, Denmark	Freshwater species	R&D Test facility	Confidential	2016
Tassal	Tasmania	Salmon	Startfeeding & Smolt facility	Confidential	2015

Atlantic Lumpus	Norway	Atlantic Lumpus	Broodstock, Hatchery, On-Growing	750.000 juveniles	2016
Sheriff	Tiraspol, Moldavia	Beluga Sturgeon	On-Growing & Rehabilitation of Broodstock	Confidential	2015
Sevani Ishkhan	Republic of Armenia	Sevan Trout	Fry Facility	4,5 million, 50 gram	2016
AquaPri	Denmark	Pike perch	Grow-out facility	500 tons, 1-1,2 kg	2014
aquaFUTURE e.K.	Germany	Salmon	Hatchery	Confidential	2014
Eel Hatchery	Denmark	European Eel	Research facility for European eel	-	2015
SalMar Settefisk AS	Troms, Senja, Norway	Salmon	Smolt facility	15 million, 120 gram	2016
Qing Hai	China	Rainbow Trout	Fry facility	1.000.000 pcs. of 20 g	2015
Jurassic Salmon	Poland	Salmon	Grow-out Facility	1.000 tons, 5 kg salmon	2014
A GRUP DIS TICARET	Turkmenistan	Sturgeon	Facility for production of Meat & Caviar	Confidential	2014
Salmones Humboldt S.A	Rahue, Chile	Rainbow Trout	Smolt facility	Confidential	2014
XinJiang Fu Kang	China	Salmon	Grow-out Facility	1.000 tons, 5 kg salmon	2014
Laksefjord AS	Norway	Salmon	Smolt facility	Confidential	2014
Trøndersmolt AS	Norway	Salmon	Smolt facility	Confidential	2013
Cooke Aquaculture	Buckman's Creek, Canada	Salmon	Smolt facility	Confidential	2012
Salmones Magallanes	Chile	Salmon	Smolt facility	Confidential	2013
Biomar	Hirtshals, Denmark	Freshwater species	Test facility	Confidential	2012
Santa Bremor	Belorussia	Sturgeon	Facility for production of Meat & Caviar	Confidential	2014
Stiftung Wasserlauf NRW	Sankt Augustin, Germany	Salmon	Hatchery System & a Combined Startfeeding- & Broodstock System	150.000 pcs. of 5 gram	2013
Biomar	Hirtshals, Denmark	Fresh- & Seawater	2 Test facilities for feed trials	Confidential	2012
Salmones Chaicas S.A	Puerto Montt, Chile	Salmon	Broodstock & Smolt Production System	120.000.000 eyed eggs and 4.000.000 Smolt/y	2012
Salmones Camanchaca S.A	Puerto Montt, Chile	Salmon	Smolt Transfer Unit	Total volume 2.360 m 3	2012
Langsand Laks	Hvide Sande, Denmark	Salmon	1 st Commercial Grow-Out system in the world	1000 ton/year	2012
Cía. Salmonífera Dalcahue Ltda	Vilcún, Chile	Salmon	Parr production system	35 tons per batch	2011
Saltwater Grow-out	Hirtshals, Denmark	Salmon & Trout	Test facility for intensive landbased Grow-out up to 3,0 kg based upon fully recirculation	60 tons per cycle	2011

Gartley & Dorsky
ENGINEERING SURVEYING




Firm Overview

Gartley & Dorsky is an engineering and surveying firm serving residents, municipalities, institutions, and businesses of Maine from our offices in Camden and Damariscotta. We provide civil and structural engineering, surveying, permitting, and soils and wetland science services for large and small projects across the state. From the small (residential additions and septic designs) to the large (ALTA surveys and full service site planning on subdivisions and commercial developments) we strive to provide each client with the same great service and cost-effective solutions. Additional information on our firm and services can be found on our website at www.gartleydorsky.com.

Surveying

Boundary Surveys and Research
Topographic/As-built Surveys
ALTA/ACSM Land Title Surveys
Subdivisions
Condominium Plats and Plans
Elevation Certificates/LOMAs
Hydrographic Surveys
Construction Layout

Civil Engineering

Roadway Design
Hydrologic Analysis and Design
Watershed Flood Studies
Subdivisions
Land Development
Engineered Sanitary Design
Site Planning
Shoreline Stabilization

Structural Engineering

Structural Analysis & Design
Building Inspections
Construction Field Assistance
Pier and Wharf Design
New Construction & Renovations
Historic Structures
Conditions Assessments
Structural Detailing

Natural Resource & Soil Services

Soils Surveys & Mapping
Vernal Pool Identification
Engineered Septic Systems
Site Evaluation
Wetland Delineation
Conventional Septic Systems

Permitting

Natural Resource Protection Act Permits
Maine DEP Stormwater Permits
Subdivision Planning Approvals
Army Corps of Engineers Permits
Maine DEP Site Location Permits
Municipal Coordination

Staff

Gartley & Dorsky has 18 licensed professionals: Professional Land Surveyors, Professional Engineers, a Licensed Site Evaluator and Certified Soil Scientist/Certified Wetland Scientist with additional support staff including permitting specialists, CAD engineering technicians, field survey crew, design engineers and administrative support.

WILLIAM B. GARTLEY

PRESIDENT (Maine P.E. 7961; Florida P.E. 73293)

Gartley & Dorsky Engineering & Surveying, Inc.

With a strong background in civil and structural engineering, Will leads the Gartley & Dorsky engineering team providing excellent engineering solutions for a full range of applications. His technical experience and knowledge is only surpassed by his natural ability to develop positive client relations and repeatedly produce a high standard of deliverables for each client and project. The continuous growth and development of Gartley & Dorsky in the small mid-coast area plays tribute to these attributes.

SKILLS PROFILE

- Project Management and Client Relations Development for all engineering projects
- Permitting and Client Representation – local and state regulatory approvals
- Structural Analysis and Design – steel, wood and reinforced concrete design, building inspections
- Civil Engineering Analysis and Design – alignment and grading, roadway and parking facility design
- Land Use Consulting – feasibility analysis, design alternative analysis
- Land Development Services – site inspections, site and subdivision design
- Code Administration: IBC, IRC, IEBC and NFPA

EDUCATION

- A.S., Civil Engineering Technology, University of Maine, Orono, Maine, 1987
- B.S., Civil Engineering, University of Maine, Orono, Maine, 1990

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2003-Present
President: Lead engineering team with high expectations and performance standards aimed to provide high quality, efficient engineered solutions in a wide variety of applications. Work closely in a personal manner with clients to achieve desired objectives and produce desired deliverables. Responsible for company growth and development as local engineering needs expand and transition. Maintain close working relations with senior and project engineers to contribute technical expertise to the team in structural and civil engineering applications. Represent clients for local and state permitting requirements.

Coffin Engineering & Surveying, Inc., Camden, Maine, 1999-2003
President: Oversee business management and development of Camden branch office. Conduct engineering analysis and design, as well as civil and structural engineering project management. Guide clients through permitting and regulatory approvals processes.

Coffin Engineering & Surveying, Inc., Augusta/Camden, Maine, 1994-1999
Senior Engineer: Civil and structural analysis and design. Project management and construction administration. Client representation for permitting and approval applications. Principal projects include MBNA facilities development in mid-coast Maine.

Coffin Engineering & Surveying, Inc., Augusta/Camden, Maine, 1990-1993
Project Engineer: Civil and structural design and analysis. Computer-aided modeling and design.

ORGANIZATIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- Structural Engineering Association of Maine (SEAM)
- Structural Engineering Institute (SEI)
- International Code Council (ICC)

JAMES A. DORSKY

SENIOR VICE PRESIDENT, CHIEF SURVEYOR
(Maine PLS 2290, Alaska PLS 9021)
Gartley & Dorsky Engineering & Surveying, Inc.

With thirty years of surveying experience, Jim leads the Gartley & Dorsky survey team with a high level of proficiency in conventional, GPS and bathymetric surveying services.

SKILLS PROFILE

- Land Surveying: Boundary surveys, deed descriptions, Topographic/As-built Surveys, ALTA/ACSM Land Title Surveys, Subdivisions, Condominium Plats and Plans, Elevation Certificates/LOMAs, Construction Layout
- Global Positioning System (GPS) surveys: Trained and experienced with Trimble and Ashtech equipment, field and post-processing experience since 1991
- Hydrographic Surveying: Bathymetric surveys, off-shore positioning

EDUCATION

- B.S., Forest Engineering, University of Maine, Orono, 1988
- Pre-Professional Forestry, Paul Smith's College, Paul Smith's, NY 1984

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2003-Present
Principal, Senior Vice President, Chief Surveyor: Leads survey team with high expectations and performance standards aimed to provide high quality, efficient surveys in a wide variety of applications. Responsible for company growth and development as local survey needs expand and transition. Maintains close working relations with senior and project engineers to contribute technical expertise to the team in survey applications.

Coffin Engineering & Surveying, Inc., Augusta & Camden, Maine, 1999-2003
Principal, Senior Vice President: Chief Surveyor for Camden Office and Head of GPS Department for Coffin Engineering & Surveying, Inc.

Coffin Engineering & Surveying, Inc., Augusta, Maine, 1996-1999
Project Surveyor: Surveyor and Head of GPS Department for Coffin Engineering & Surveying, Inc.

Lounsbury & Associates, Kuparuk, Alaska, 1995-1996
Office Technician: Field crew support, calculations, and plan preparation for construction surveys for structures and pipelines in the North Slope oil fields.

ASCG Incorporated, Anchorage, Alaska, 1991-1995
Project Surveyor: Performed all aspects of survey projects from start to finish from field work in remote locations throughout Alaska to finalizing final plans in the main Anchorage office. Work included topographic and boundary surveys, high precision monitoring and construction surveys for structures and pipelines on the Trans Alaska Pipeline and in the North Slope oil fields, high order GPS control surveys, and hydrographic surveying.

Ocean Technology, Ltd, (*Subsidiary of ASCG, Inc*), Anchorage, Alaska, 1990-1991
Party Chief for survey crew

Land Use Consultants, Portland, Maine, 1987-1990
Party Chief for survey crew

ORGANIZATIONAL AFFILIATIONS

- Maine Society of Land Surveyors (MSLS)
- American Congress on Surveying and Mapping (ACSM)
- National Society of Professional Surveyors (NSPS)

WILLIAM T. LANE

VICE PRESIDENT (P.E. 7577)

Gartley & Dorsky Engineering & Surveying, Inc.

Experience in project development from conceptual phases to regulatory review, stakeholder input, design, construction and operations. Bill focuses on client needs, communicates, and contributes to projects with more than 30 years of problem solving experience.

SKILLS PROFILE

- Civil Engineering Project Management
- Civil Engineering Analysis and Design – alignment and grading, drainage and stormwater management, erosion and sedimentation control, utilities and infrastructure considerations
- Land Use Consulting – feasibility analysis, design alternative analysis
- Permitting and Client Representation– local and state regulatory approvals
- Contract Administration – bid document preparation and construction contract administration
- Facilities design – municipal and commercial applications
- Structural Analysis and Design – steel, wood and reinforced concrete design, building inspections
- Code compliance

EDUCATION

- B.E.C.E., The Cooper Union for the Advancement of Science and Art, New York, New York, 1986

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2003-Present
Vice President: Civil and structural design and analysis combined with a focus on overall project management and client relations. Projects in municipal, commercial, industrial, institutional and residential markets.

Coffin Engineering & Surveying, Inc., Augusta/Camden, Maine, 2000-2003
Senior Engineer: Civil and structural design and analysis combined with a focus on overall project management and client relations.

W.T. Lane, P.E./Timberwrights , Rockport, Maine, 1995-2000
Sole Proprietor: Projects in specialty construction, structural analysis and civil engineering for commercial and residential clients.

Lowry Environmental Engineering, Inc, Blue Hill, Maine, 1991-1998
Engineer: Projects in water quality applications for municipal, commercial and industrial clients. Consulting engineering, design, design/build and job fabrication.

Sear-Brown Group, Inc., Lake Success, New York, 1986-1990
Project Engineer: Projects in civil and environmental field for municipal, commercial and industrial clients.

ORGANIZATIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- Structural Engineering Association of Maine (SEAM)

ANDREW D. HEDRICH

SENIOR ENGINEER (P.E. 12658)

Gartley & Dorsky Engineering & Surveying, Inc.

Adaptation to the always changing environmental permitting requirements and working closely with the Department of Environmental Protection Agency has allowed Andrew to receive approval for numerous environmental permits. Andrew has been working as a project engineer for civil engineering projects in the State of Maine for over 15 years. He fully utilizes current civil engineering technology in the design of projects at Gartley & Dorsky.

SKILLS PROFILE

- Land development – site inspections and design, subdivision design
- Permitting and Client Representation– local and state regulatory approvals
- Roadway Design – alignments, plan preparation, utility and right-of-way coordination
- Civil Engineering Project Management
- Contract Administration – bid document preparation and construction contract administration
- Civil Engineering Analysis and Design – alignment and grading, drainage and stormwater management, erosion and sedimentation control
- AutoCAD Civil 3D -Computer Aided Design Proficient
- HydroCAD, TR-20, and TR-55 Proficient

EDUCATION

- B.S., Civil Engineering, University of Maine, Orono, Maine 2001

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2007-Present
Senior Engineer: Provides project management for broad range of civil engineering projects, which includes construction administration, permitting requirements, and representing the client for approval applications.

Engineering Dynamics, Inc., Bangor, Maine, 2001-2007
Project Engineer: Primarily projects associated with residential development, project management, construction administration, and client representation for permitting and approval applications.

PROFESSIONAL CERTIFICATIONS

- Inspection and Maintenance of Stormwater BMPs Certification from MaineDEP
- Certified Third Party Inspector from MaineDEP
- Local Project Administration(LPA) Certification from MaineDOT

ORGANIZATIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)

ADDISON A. WHITWORTH

PROJECT SURVEYOR (Maine PLS 2424)

Gartley & Dorsky Engineering & Surveying, Inc.

SKILLS PROFILE

- Land Surveying: Boundary surveys, Topographic surveys, Hydrographic surveys, As-Built surveys, Subdivisions, deed descriptions, field data collection and analysis, Global Positioning Satellite (GPS) System surveys, Ground control for Aerial Mapping, preparation of final plans, site inspections, , ALTA/ASCM Land Title Surveys,
- Condominium Plats and Floor Plans
- Construction Layout, Structural Monitoring, Elevation control, Construction Material Volume Calculations, Building Volume Calculations
- FEMA Flood Certificates and Letters of Map Amendments
- Mapping: Survey plans, base maps, road plans, GIS Mapping
- Experienced with CAD/LDD & Microstation, Field and office GPS procedures, Robotic Total station, Digital Levels

EDUCATION

- B.S., Northern Michigan University, 1998

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2003-Present
Project Surveyor: Duties include field data collection for boundary surveys, field data analysis, Global Positioning Satellite (GPS) System surveys, and site inspections. Field survey team Crew Chief. Specialize in bathymetric surveys, evaluation of field data, preparation of final plans, deed research and preparation of deed descriptions.

Coffin Engineering & Surveying, Inc. Camden, Maine, 2001-2003
Survey/ Engineering Technician: Performed architectural and Structural data collection and drafting. Roadway and utility and site plan design for planning board review. Conducted boundary survey data collection, deed research, topographic and GPS control surveys.

Sundburg Carlson & Assoc. Marquette, Michigan, 2000-2001
Survey Drafting Technician: Responsible for Creation of survey plans for Private, Commercial and State agencies. Performed building and road layout, GPS control, topographic, Structural Monitoring surveys.

Jack Johnson Co. Park City, Utah, 1999-2000
Engineer Drafting Technician/Field technician: Responsible for creation of road and utility plan and profiles in compliance with engineers specifications. Site plan design, layout and field inspections. Building & Road layout , Topography and GPS control surveys.

ORGANIZATIONAL AFFILIATIONS

- Maine Society of Land Surveyors (MSLS)
- American Congress on Surveying and Mapping (ASCM)
- National Society of Professional Surveyors (NSPS)

STEVEN A. TREMBLAY

PROJECT SURVEYOR (Maine PLS 2366, New Hampshire LLS 761)

Gartley & Dorsky Engineering & Surveying, Inc.

SKILLS PROFILE

- Land Surveying: Boundary surveys, Topographic surveys, Hydrographic surveys, As-Built surveys, Subdivisions, deed descriptions, field data collection and analysis, Global Positioning Satellite (GPS) System surveys, Ground control for Aerial Mapping, preparation of final plans, site inspections, , ALTA/ASCM Land Title Surveys
- Condominium Plats and Floor Plans
- Construction Layout, Structural Monitoring, Elevation control, Construction Material Volume Calculations, Building Volume Calculations
- FEMA Flood Certificates and Letters of Map Amendments
- Mapping: Survey plans, base maps, road plans, GIS Mapping
- Experienced with CAD/LDD, Field and office GPS procedures, Robotic Total station, Digital Levels

EDUCATION

- A.A.S., Civil Technology, Thompson School of Applied Science, University of NH, 1979

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2012-Present

Project Surveyor: Duties include field data collection for boundary surveys, field data analysis, Global Positioning Satellite (GPS) System surveys, site inspections, evaluation of field data, preparation of final plans, deed research and preparation of deed descriptions. Proficient in Lieca Viva Controller, Lieca GPS Receivers & Lieca Robotic Instruments.

Good Deeds, Inc., Belfast, Maine, 2000-2012

Project Surveyor: Boundary, topographic, construction control and construction layout surveys including all Portland Jetport surveys. Party chief, instrument man, draftsman, project manager, responsible for all aspects of projects from bidding to final plan preparation. Proficient with Topcon instruments, TDS Ranger Data Collector.

Kennebec River Land Surveying, Vassalboro, ME 2010-2012

Project Surveyor: Patriot Renewable Wind Projects; Carthage, Canton, Dixfield, Woodstock: Spruce Mountain, Maine. Boundary surveying, deed and title research. Party chief, instrument man. Proficient with Topcon Field Controllers; FC-2500, TOPSURV 8 software, Hyper G and Hyper II GPS receivers.

Sandford Surveying & Engineering, Bedford, NH 1990-1999

Project Surveyor: Full service Civil Engineering and Land Surveying Firm. Project manager, L.L.S. Responsible for most deed research. Site work included industrial/commercial site plans, housing developments, and municipal water and sewer projects.

Various Surveying/Engineering positions 1977-1990

Organizational Affiliations

- Maine Society of Land Surveyors (MSLS)
- American Congress on Surveying and Mapping (ACSM)
- National Society of Professional Surveyors (NSPS)
- New Hampshire Land Surveyors Association

NATALIE MARCEAU

LICENSED SITE EVALUATOR- WETLAND SCIENTIST

Maine LSE #411

Gartley & Dorsky Engineering & Surveying, Inc.

With a background in biology, recently licensed Site Evaluator and soil and wetland scientist in training, Natalie contributes a breadth of natural resource experience to the Gartley & Dorsky team.

SKILLS PROFILE

- Site Evaluation - Subsurface wastewater disposal designs (residential and commercial)
- Permitting – NRPA permits, Site Location of Development Permits, municipal permits
- Wetland Science – Wetland delineation, classification, and mapping

EDUCATION

- B.S., Biology, University of Maine, Orono, 2012
- Post-graduate coursework: Soil Science - University of Maine; Environmental Soil Chemistry and Plant Nutrition - University of Maine; Soil Morphology, Genesis & Classification – North Carolina State University

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2015-Present
Site Evaluator, Permitting Services, Soil Scientist and Wetland Scientist in training: Septic System Design, Wetland Delineation, NRPA permits, Site Location of Development Permits, municipal permits

ClearWater Laboratory, Newport, Maine, 2013-2015
Laboratory Analysis: Whole Effluent Toxicity Testing in addition to biochemical oxygen demand, total solids and total suspended solids analysis on wastewater, low-level total phosphorus analysis, high range and low-level ortho phosphorus analysis, nitrate and nitrite analysis on drinking water as well as wastewater and total coliform/e. coli testing.

Maine Department of Environmental Protection, Biological Monitoring Unit,
Augusta, Maine, 2012-2013
Conservation Aide, AmeriCorps: collecting biological, chemical, and physical data from Maine's rivers, streams, and wetlands, uploading data into the department's Environmental and Geographical Analysis Database (EGAD), and helping to create the unit's annual surface water ambient toxics (SWAT) report.

Certifications

- Licensed Site Evaluator - State of Maine License #411

ORGANIZATIONAL AFFILIATIONS

- Maine Association of Site Evaluators (MASE)
- Associate member of Maine Association of Soil Scientist (MASS)
- Associate member of Maine Association of Wetland Scientist (MAWS)

John Melanson
ENGINEERING TECHNICIAN
Gartley & Dorsky Engineering & Surveying, Inc.

With a varied background in both the residential and commercial construction industry, ranging from hands-on carpentry to civil site development, for the past 30 years, John has had a main focus on the design and creation of structural and civil plans utilizing the latest computer software available.

SKILLS PROFILE

- AutoCAD -Computer Aided Design proficient
- Land development – site plan design, subdivision design, erosion and sedimentation control plans
- Roadway design – alignments, profiles, corridors, sanitary systems and stormwater systems
- Architectural design – floor plan layouts and elevations
- Structural (steel, wood and concrete construction) – framing plans, structural details and retaining walls

EDUCATION

- Associate Degree in Applied Science (Building Construction)
  Eastern Maine Vocational Technical Institute, Bangor, Maine 1982

PROFESSIONAL EXPERIENCE

Gartley & Dorsky Engineering & Surveying, Inc., Camden, Maine, 2003-Present
Engineering Technician: responsible for the creation of plans in compliance with engineer's specifications.

Coffin Engineering & Surveying, Inc., Camden, Maine, 1994-2003
Engineering Technician: responsible for the creation of plans in compliance with engineer's specifications.

Old Town Regional Program, Old Town, Maine, 1989-1994
Responsible for supervising and teaching challenged students drafting, woodworking and building construction methods.

Northern Products Log homes, Inc., Bangor, Maine, 1983-1992
Responsible for the design, creation and quality control of plans for pre-cut log homes.

Gartley & Dorsky
ENGINEERING SURVEYING

FIRM DESCRIPTION

With our extensive experience in Engineering and Surveying we look forward to the challenge of each new project and our goal of client satisfaction. Gartley & Dorsky Engineering & Surveying offers a full suite of engineering and surveying services, including civil, structural, and mechanical engineering, land and hydrographic surveying, wetland delineation, soils analysis, and septic design, permitting and land planning for residential owners, large corporations, architects, contractors, municipalities and state government. CADD services are also available for clients who might not have the resources or time to perform drafting services.

The staff at Gartley & Dorsky has provided engineering and surveying services to a large number of commercial clients in the mid-coast area, including Belfast Boatyard, Front Street Shipyard, Wayfarer Marine, Rockland Harbor Park, LLC, Maine Sport Outfitters, VIP, Wendy's, Fisher Engineering, Reny's, MBNA, Community Housing of Maine, Belfast Co-Housing, and Camden Affordable Housing. In addition to the corporate clients, Gartley and Dorsky has been engaged by the Towns of Camden, Rockport, Northport, Thomaston, Lincolnville, Appleton, Cushing, and Union (among others) along with the City of Rockland and MDOT for various services.

Gartley & Dorsky Engineering & Surveying, Inc. has professional engineers, engineering technicians (CADD), professional land surveyors, surveying technicians, soil scientists, project managers and office administrators. Please see our web page at www.gartleydorsky.com.

CIVIL AND STUCTURAL ENGINEERING SERVICES

Gartley & Dorsky Engineering & Surveying, Inc. has experience in a broad array of civil and structural design. Whether we are engaged to provide a complete engineering package for a project, or specific services on an as-needed basis, our objective to develop solutions that are in the client's best interest. Teams are tailored to projects and assigned to follow through from beginning to end, with principals and/or department heads taking an active role in ensuring that work stays on course throughout.

Structural Assessment and Design

- Buildings (Commercial, Industrial and Residential)
- Bridges
- Retaining Walls
- Wharves and Piers
- Parking Structures

Land Development

- Site Planning and Design
- Facilities Site Infrastructure
- Regulatory Permitting: Federal, State and Local Agency Approvals
- Stormwater Analysis and Design, and Watershed Flood Studies
- Sanitary and Water System Assessment and Design
- Subdivisions

Roadway Design (Highways, Roads, and Streets)

- Horizontal and Vertical Alignment
- Preparation of Plan, Profile, and Cross-Sections
- Utility and Right of Way

Engineered Sanitary and Water System Design

- Sewer extensions
- Water main extensions
- Pump Station design and evaluation
- Stormwater separation

Hydrologic Analysis and Design

Watershed Flood Studies

SURVEYING SERVICES

Whether on a large or small scale, Gartley & Dorsky Engineering & Surveying, Inc. delivers accurate, reliable surveys. Our files contain thousands of surveys from almost every county in Maine. That amount of experience means that a complete and thorough job can be done more efficiently.

Advanced technology has allowed the surveying department to accomplish greater speed in gathering and managing data than at any time in the past. The firm has the latest in GPS (Global Positioning System) technology with its three Trimble™ 4400 receivers. These survey grade receivers are capable of performing geodetic level survey control. What really set them apart from other GPS receivers are their RTK (Real Time Kinematics) capabilities. This system allows us to achieve centimeter-level accuracy in real time horizontally and vertically for collecting data or performing stakeout routines.

Leica Robotic Total Stations are also employed to collect and record data in an efficient, accurate way. This enables one person to perform more efficiently than a conventional two-man survey crew equipped with a total station and data collector.

Boundary Surveys & Research

- Deed Research
- Retracement Surveys
- Legal Description and Reports
- Detailed Survey Plans
- Expert Witness Consultation

Topographic and As-Built Surveys

- Bathymetric
- Hydrographic
- Wetland delineation & Mapping

Major and Minor Subdivisions

- Layout and Planning
- Road and Street Design

Regulatory Permitting

- Subdivisions
- Gravel Pits
- Marine Leases

Mapping

Mortgage Inspections

Traffic Accident Scene Surveys

Flood Elevation Certificates

PERMITTING

The permitting process has become more complex and time consuming than the typical landowner may wish to handle. Our firm has the initiative to look for creative solutions that are frequently more resourceful than conventional concepts. Rather than sitting back and awaiting results from an often overworked bureaucracy, our personnel have the initiative to follow through every phase of the review process to obtain final approvals.

- Subdivision planning design and approvals
- Site planning design and processing
- Zoning amendments
- Wetland permitting
- Vernal Pool permitting
- Natural Resources Protection Act permits
- Chapter 305 Permit by Rule
- Maine Department of Environmental Protection Stormwater permit
- Maine Department of Environmental Protection Site Location of Development permit
- Maine Department of Environmental Protection Excavation, Quarry and Variance permits

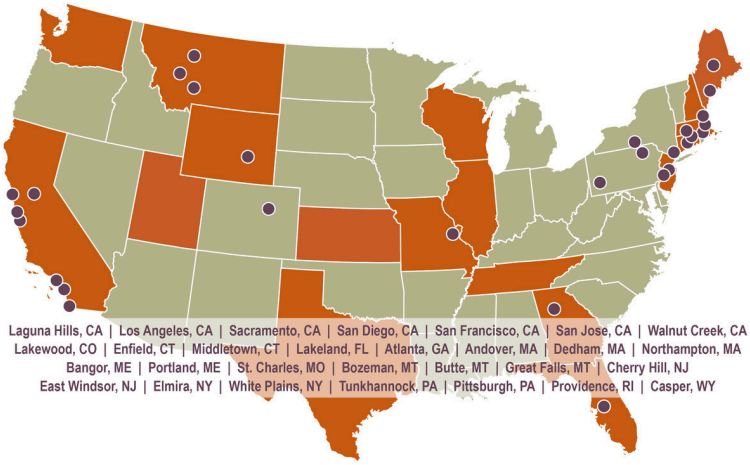
INSURANCE

Gartley & Dorsky Engineering & Surveying, Inc's insurance encompasses general liability, errors and omissions liability, workmans compensation and automobile liability. A Certificate of Insurance is available upon request. As needed, clients are added to our insurance as an additionally insured party.

PROFILE OF THE FIRM

Woodard & Curran is an integrated engineering, science, and operations company. Privately held and steadily growing, we serve public and private clients locally and nationwide.

Talented people are at the heart of our firm. Our company was founded in 1979 on a simple business concept: provide an enjoyable place to work with opportunity, integrity, and commitment, and we will attract talented people. It happened. At the heart of our company are people who are experts in their fields and passionate about what they do, showing a level of commitment and integrity that drive results for our clients. You experience this power every day in our actions, our solutions, and our promises kept.



Woodard & Curran serves clients locally and nationwide from offices throughout the U.S. Headquartered in Portland, Maine, the firm operates offices in the locations noted above, as well as treatment facilities in the states that appear in orange.

Commitment evident in personal approach

Our commitment is reflected in the personal attention, collaborative resources, and dedication to results that we devote to each project. We assign the right people with the right expertise to the job, and provide clients with easy accessibility to senior experts.

Our work is characterized by responsiveness, resourcefulness, and willingness to do what it takes to get the job done properly. Examples range from helping communities garner state and federal funding for wastewater treatment system improvement to managing a multi-vendor manufacturing project through a major snowstorm and getting production lines up and running. We are experts at navigating the complexities of environmental regulations and have been involved in transforming many brownfields sites into marketable properties. In defining moments like these, it is commitment that brings our clients results.

Operating with integrity

Our integrity impacts our decision-making at all junctures of our work — from the openness of our communication to the fairness of our prices to placing your interests above our pocketbook. We hire people who share our values of honesty, respect, and fairness and who want to do the right thing. They, in turn, treat everyone — our people, our clients, regulators, and stakeholders — respectfully and honestly.

Full-service firm with multidisciplined staff

Our integrity and commitment are matched only by the depth of our expertise. Our staff are specialists in their fields, offering in-depth understanding of cutting-edge technology, astute problem-solving, multidisciplinary engineering, and expert regulatory guidance. The firm has received numerous honors and awards, and we have ranked among *Engineering News-Record's* top 100 environmental firms every year since 2000.

Services to the private sector

Woodard & Curran provides a range of site/civil and environmental engineering, science, and operations support to companies in the real estate sector, as well as to hospitals, colleges and universities, and law firms, helping our clients realize their project vision.

BARRY SHEFF, PE
PROJECT STRATEGIST

Professional Profile

Barry is a Senior Principal with over 25 years of experience working with the public sector on infrastructure planning and implementation, and with the private sector on urban revitalization projects. He is responsible for design and project management, with expertise engaging and facilitating stakeholder processes and strategic decision-making. He focuses his work on sustainable environmental design and is committed to collaborating with owners and stakeholders to develop practical solutions to complex problems. Barry has been involved in numerous projects with high-performance buildings and LEED certification. He has a track record of understanding client expectations, and excellent communication skills that enable him to drive the success of small and large projects of varying complexities. Barry was recently appointed Chair of APWA Water Resources Management Committee, a national committee of public and private sector water professionals.

Related Experience

Cianbro - Nordic Aquafarms Saltwater Intake, Pump Station and Discharge Design-Build. Principal-in-Charge supporting Cianbro led team with $15M saltwater supply to support a ground up on-shore salmon aquaculture project in Belfast, ME, that will produce 33,000 tons of Atlantic salmon per year. The components of the project under our responsibility involves the design-build delivery of twin 30" diam saltwater intakes extending 6,900 feet into Penobscot Bay, 7.5MGD pump station integrated into the landside facility, and 36" diam effluent discharge back into the Bay.

Sargent Corp - Back Cove South Storage Facility Design-Build. Project Strategist for our design team responsible to Sargent Corp for design-build of the $39M 3.5 million gallon (MG) Back Cove South Storage Facility (BCSSF), under the City's Administrative Consent Agreement with the State of Maine Department of Environmental Protection (DEP) to abate combined sewer overflows (CSOs). The off-line storage project will reduce annual overflow volumes from 150 MG to 18 MG. Our work includes planning, engineering, design, permitting support, start-up, and commissioning of the BCSSF (located in Back Cove Park) diverting flows below the regulators (CSO 16, 17 and 18) and upstream of the discharge and conveyed to the off-line tank. The tank is intended to be cleaned using potable water and tipping buckets; pumps in the tank and a force main, shall convey stored overflow to the existing sewer system in Marginal Way, downstream of the Franklin Street Pump Station and upstream of the Portland Water District Northeast Pump Station. The buried storage tank area is to be restored with a new multi-purpose grass athletic field. Construction substantial completion is scheduled for 2022.

City of Portland, ME – Curtis Road Pump Station Upgrades Design-Build. Principal-in-Charge responsible for the City of Portland's first progressive design-build project, a comprehensive upgrade of the Curtis Road Pump Station. The project involved our completing a 60% design of pump station upgrade and development of a Guaranteed Maximum Price (CMP) proposal for the City's consideration. Upon City acceptance of the GMP we completed design documents (IFC) for funding and regulatory agency review; procured major equipment (generator and package pump station); solicited subcontractor

Education

- Bachelors, Civil / Environmental Engineering, University of Vermont

Registrations

- Registered Professional Engineer - ME
- NCEES License - National, 60366
- Maine DOT Local Project Administration Tier 1 Certification

Professional Associations

- American Society of Civil Engineers
- American Public Works Association
- New England Water Environment Association (NEWEA)
- Order of the Engineer

bids for mechanical and electrical trades; and completed the construction project including start-up and commissioning in summer 2019, on schedule.

City of Portland, ME – Franklin Street Pump Station Upgrades Design-Build. Principal-in-Charge responsible for the City of Portland's progressive design-build project, a prioritized upgrade of the Franklin Street Pump Station. Scheduled by the City in 2015 to be removed from service in 2019, the City has foregone investments in the pump station in the recent past. The project involved an assessment of critical pump station infrastructure and prioritization of improvements, completing a 60% design of pump station upgrade and development of a Guaranteed Maximum Price (CMP) proposal for the City's consideration. Upon City's acceptance of the GMP we completed final design/construction documents (IFC) for funding and regulatory agency review; procured major equipment; solicited subcontractor bids for by-pass pumping, roofing, hazardous materials abatement, concrete repair, sitework, mechanical and electrical trades among others; and initiated construction. Pump Station start-up and commissioning is anticipated for fall 2019, on schedule.

FB Environmental / US EPA, Arlington, MA – Hurd Field Porous Pavement Retrofit Design-Build. Principal-in-Charge responsible for the design-build of the first EPA Region 1 pervious bituminous pavement retrofit project. In partnership with FB Environmental, we provided engineering and general contracting for the successful design-build, completed in 2012 of ~15,000 SF parking lot located immediately along the Mystic River. This educational/demonstration project removed directly connected impervious area and utilized excellent subgrade conditions to infiltrate the 100-year storm event.

City of Portland, ME – Winding Way Drainage Improvements. Principal-in-Charge for the design-build effort associated with improvements within the City right-of-way, to address private property erosion along Nasons Brook. Our team provided engineering, permitting, and construction services (utilizing a local site contractor) to install underdrains, green infrastructure (road edge underdrained soil filters), and municipal storm drain system with an improved outfall to the brook, to reduce flooding impacts from the City's street. The total project value was approximately $200,000 and involved considerable coordination with private property owners.

City of Portland, ME – Bayside Trail Contaminated Soil Removal. Principal-in-Charge for the design-build effort associated with removal of 1,000 tons of contaminated soil alongside the City's Bayside Trail. We provided engineering associated with the grading, MaineDEP VRAP coordination and documentation, soil screening/testing and construction services (utilizing a local site contractor). The project was planned by the City to remove impediments to redevelopment by the private sector in the urbanized Bayside Neighborhood of the City. Our team completed the project (digging, hauling and restoring the site) without safety incidents expeditiously over a four-day period, resulting in a savings to the City of nearly $65,000 against the original $300,000 budget.

City of Portland, ME – Capisic Pond Restoration. Principal-in-Charge responsible for the study, pre-permitting, and investigation of restoration alternatives for the urban pond. The project included pond sediment analysis for beneficial reuse, public meetings and facilitation, wetland enhancement plan, and critical outfall runoff control and abatement.

MaineDOT, Portland, ME – Ocean Gateway Multimodal Facility. Program and Project Manager of the permitting and design for implementing first phase of the Master Plan of the redevelopment of a 19.5-acre ship repair facility to a multi-use marine transportation facility on Portland's waterfront. The phase one facility encompasses the former Bath Iron Works site and the associated City-owned land-based infrastructure. Under Barry's responsible charge, Woodard & Curran prepared, submitted, and obtained land-use and environmental permits for the project. Woodard & Curran also designed the site infrastructure to be flexible in its use including two new stormwater outfalls to Casco Bay. The project includes the design of City streets, a major regional trail connection, and the narrow gauge passenger railway. The design of utility infrastructure and blending the facility into an existing congested urban environment proved challenging, but in the end, met the City's future needs. As the Program Manager, Barry was responsible for managing the contract with the State of Maine and the 10-firm design team to design and permit the improvements includes two large vessel berths (Pier 2 Berth 1 and Berth 2). As the lead civil engineer and project manager at Woodard & Curran, Barry was responsible for preparing permitting documents, the design of the civil/site improvements, and the complete set of technical plans and specifications that make up the bidding documents.

MEGAN MCDEVITT, PE
PROJECT MANAGER

Professional Profile

Megan is a Project Manager with 14 years' experience in civil/site design for municipal and private clients. Megan's experience includes roadway reconstruction, utility infrastructure, landfill closure, transfer station design, stream restoration and asset management projects. Her responsibilities include stormwater modeling, state and local permitting, cost estimating and construction oversight. As a Project Manager, Megan brings outstanding communication skills, attention to detail and a unique ability to bring multi-disciplined project teams together to deliver projects on schedule and budget.

Related Experience

Town of Kennebunkport, ME – Ocean Avenue Seawall Replacement Project. Project Manager responsible for the development of permitting and construction documents for the replacement of approximately 680 linear feet of deteriorating historic seawall with a segmented precast concrete block retaining wall. The project design included careful consideration for balancing the requirements to provide crash-rated guardrails due to proximately of critical slopes and the public's desire to maximize views of the water. We worked closely with the Town, residents, and the general contractor to develop an aesthetic solution within the Town's budget.

Sargent Corp – Back Cove South Storage Facility Design-Build. Design Manager for the design team partnering with Sargent Corporation for design-build of the $39M 3.5 million gallon (MG) Back Cove South Storage Facility (BCSSF), under the City's Administrative Consent Agreement with the MaineDEP to abate combined sewer overflows (CSOs). The off-line storage project will reduce annual overflow volumes from 150 MG to 18 MG. Our work includes planning, engineering, design, permitting support, start-up, and commissioning of the BCSSF (located in Back Cove Park) diverting flows below the regulators (CSO 16, 17 and 18) and upstream of the discharge and conveyed to the off-line tank. The tank is intended to be cleaned using potable water and tipping buckets; pumps in the tank and a force main, shall convey stored overflow to the existing sewer system upstream of the Portland Water District Northeast Pump Station. The buried storage tank area is to be restored with a new multi-purpose grass athletic field. Construction substantial completion is scheduled for 2022.

City of Lowell, MA – Power and Controls Upgrade. Engineer responsible for design of a new electrical room addition to the existing influent pump station and retrofits to an existing building. Responsibilities include development of architectural and structural plans and specifications for a new 875 square-foot reinforced CMU building addition and renovations to existing Electrical Services Building.

Town of Billerica, MA – WWTF Tertiary System Upgrades. Engineer responsible for review of all structural and architectural submittals during construction. Project includes installation of the proprietary CoMag process, a pump station capable of pumping the 16.5 MGD peak flow, gravity thickeners, dedicated waste activated sludge pumps, chemical storage and feed systems, and a plant wide SCADA system.

Education

- Bachelors, Civil Engineering, University of Maine

Registrations

- **Registered Professional Engineer - ME, 13019**

Professional Associations

- American Public Works Association, Member
- Structural Engineers Association of Maine

City of Ellsworth, ME – WWTF Design. Engineer participating in the design of a new wastewater treatment facility. Responsibilities include development of architectural and structural plans and specifications for a new insulated concrete form Operations Building, reinforced CMU Process Building and perforated metal screen wall Blower Building.

Raytheon Systems Company, Sudbury, MA – WWTP Upgrades. Engineer responsible for design of a new process building. Responsibilities include development of architectural and structural plans and specifications for a new 576 square-foot pre-engineered metal process building. Project included a reinforced CMU process building bid alternate design. During construction, responsibilities included review of submittals.

Paris Utility District, South Paris, ME – Phase I WWTF Upgrade. Engineer responsible for performing site inspections and review of all structural and architectural submittals during construction. Project included upgrade of the headworks building as well as installation of new screening and grit removal facilities.

City of Portland, ME – Sewer System Evaluation Study (SSES). Project Engineer involved in the SSES to evaluate the City's sanitary sewer system with the end goal to reduce Sanitary Sewer Overflows (SSO) by developing a capital improvement plan (CIP). Responsibilities included condition assessments and CIP work for the structural components within nine of the City's pump stations using a criticality-based approach (risk versus consequence of failure analysis).

City of South Portland, ME – Asset Management. Project Manager responsible for developing an enhanced asset management program for the City's roadway and sanitary sewer collection system assets. Project included performing a Consequence of Failure and Risk Analysis for the City's assets, conducting a Data and Practice Gap Assessment, and developing improved work order processes, and facilitating a Computerized Maintenance Management System (CMMS) software procurement process.

City of Portland, ME – Drainage System Master Plan. Project Engineer responsible for the development of a plan to address the City's stormwater system (drainage collection system and major cross culverts) capital, operations and maintenance, program management, and regulatory compliance needs. Responsibilities included conducting a data gap analysis of the City's GIS drainage database, performing a Consequence of Failure analysis for storm drains and culverts, and conducting targeted field condition assessments of the City's drainage assets utilizing a NASSCO PACP certified inspection crew.

Town of Northborough, MA – Water/Sewer Department Feasibility Study. Project Manager responsible completing a feasibility study for the expansion of the Town of Northborough's Water/Sewer Department Facility. Responsibilities included conducting a simple space needs and programming study consisting of interviewing staff to gain understanding of job requirements and space needs, assessing existing building conditions, and inventorying existing equipment. Once the field data was gathered, preliminary floor plans, building elevations and site plans were developed for the proposed expansion to the facility and a construction cost estimate was prepared to help facilitate fiscal budgeting.

City of Portland, ME – Carlyle/Canco/Walton Sewer Separation. Engineer involved with stormwater modeling, cost estimating, and development of plans and specifications for a residential and industrial neighborhood combined sewer separation project. Project included approximately 2,700 linear feet of new separated storm sewer, sanitary sewer, and roadway reconstruction.

City of Portland, ME – West Side Interceptor Sewer Replacement. Engineer involved in permitting and design for removing and replacing 5,600 linear feet of combined sewer that runs cross-country from Lucas Street to Congress Street in Portland. Responsibilities include NRPA permitting, development of specifications and plans, structural design for pipe thru-crossings, and cost estimating. Project includes replacement of sanitary sewer, erosion control and sedimentation design, gravel access road design and drainage improvements.

City of Portland, ME – Read/Bay Street Sewer Separation. Engineer involved with stormwater modeling, cost estimating, and development of plans and specifications for a residential and industrial neighborhood combined sewer separation project. Project included approximately 5,500 linear feet of new separated storm sewer, sanitary sewer, roadway reconstruction and stormwater treatment systems.

City of Portland, ME – Ray Street Sewer Separation. Engineer involved with stormwater modeling, cost estimating, and development of plans and specifications for a residential neighborhood combined sewer separation project. Project included approximately 5,500 linear feet of new separated storm sewer, sanitary sewer, roadway reconstruction and stormwater outfall. Responsibilities included performing a cost analysis for alternative designs.

ERIC CARLSON, CG, PE

VP OF INNOVATIONS & NEW VENTURES

Professional Profile

Eric is a Senior Vice President in charge of Innovation and New Ventures at Woodard & Curran. He has international experience in the design and construction of new facilities in the industrial manufacturing industry ranging from the food and beverage market to plastic recycling. After 20 years focusing in the food and beverage market and creating innovative new solutions involving process changes, the design and development of new machines, and the startup of new companies, Eric now leads the development of special projects developing new technologies, connecting existing technologies, and helping our customers to more environmentally, sustainably, and economically use technology to achieve their goals. As well as bringing vision and creative ideas to our customers, Eric's extensive experience in hydraulic analysis; pumping systems; a broad mix of electrical, controls, vision systems, robotics, and mechanical/utility systems; and manufacturing and packaging equipment brings reality to the idea.

Related Experience

Confidential Client, Various Location – Groundwater Modeling. Completed extensive groundwater modeling for a confidential client to maximize spring production using boreholes while meeting the stringent requirements for permits obtained in all 50 states. Work included detailed field work, hydrogeologic modeling, geochemical analysis of spring and borehole chemistry and infrared mapping.

rPlanet Earth, Vernon, CA – New Design and Construction. Principal in charge for the design and construction of a 300,000-square foot greenfield manufacturing facility including all mechanical, electrical, manufacturing, process, plumbing, HVAC controls. Total constructed cost of $150M. The facility takes baled recycled plastic in the front end, sorts it out, collects all PET, decontaminates it to FDA food grade flake, and goes directly into manufacturing preforms, sheet, and thermoformed products. This is a first of kind plant where all recycling and manufacturing is under one roof eliminating transportation of flake, optimizing the thermal process between decontamination and product manufacturing, and significantly reducing the carbon foot print of plastic manufacturing.

Coca-Cola North America, Atlanta, GA – Coke Freestyle Manufacturing. Principal in charge of the design and construction of a 200,000 square foot building expansion that would be used to create the product supply for all of the Coke Freestyle machines including building expansion, the design and development of serial number 1 machines, MEP, packaging equipment, procurement, specifications, packaging equipment specifications for bidding purposes, construction administration, construction management of all building and manufacturing components, robotics, and automated storage and retrieval systems, and assisting CCNA in the bid evaluation process.

Education

- Bachelors, Geology, University of Maine
- Bachelors, Civil Engineering, University of Maine
- Masters, Civil Engineering, University of Maine

Registrations

- Professional Engineer - ME
- Professional Geologist - ME

Professional Associations

- American Geophysical Union, Member
- American Society of Civil Engineers, Member
- American Society of Groundwater Scientists and Engineers, Member
- National Groundwater Association (NGWA), Member
- New England Water Works Association, Member

Town of Brownville, ME – Groundwater Modeling. Utilized groundwater modeling to interpret groundwater mounding and the infiltration capacity for a subsurface disposal system for the Town of Brownville. The analysis was critical to optimizing the orientation of the subsurface infiltration beds and getting the project approved by the regulatory agencies.

Fryeburg Water Company, Fryeburg, ME – Groundwater Exploration. Designed and conducted an exploration program for the Fryeburg Water Company. The work included locating a new groundwater source with sufficient quantity and excellent quality, design and construction supervision of a gravel pack well, design of the pump station, and connection to the existing system. All construction drawings were given to the owner for construction under the owner's supervision.

Warren Sanitary District, Warren, ME – Wastewater Treatment Lagoon. Principle Hydrogeologist and Geotechnical Engineer for the development of 6.1 acres of lagoons in Warren. Hydrogeologic work included geologic and hydrogeologic evaluation of the site, contaminant transport modeling, groundwater interaction with the St. George River, and presenting all material to the Department of Environmental Protection for approval.

Maine Army National Guard, Central ME – Water Resources Evaluation. The Deepwoods project involved the identification of potential water resources of over 8,000 acres in Central Maine. The project included modeling surface water hydrology and the effects of surface water withdrawal on the groundwater flow system.

Town of Douglass, MA – Hydrogeologic Investigation. Conducted a hydrogeologic investigation for a 120-acre landfill project that involved the analysis of a fractured bedrock aquifer, bedrock flow regime, the interaction between surface water and groundwater, failure analysis, and the analysis of multiple pumping tests to characterize aquifer hydraulic properties.

Town of Dixfield, ME – Water Resource Study. Responsibilities involved development of a phased groundwater resource investigation plan identifying both potential groundwater and surface water supplies. The project involved surficial mapping, geophysical evaluation of several potential aquifers, and option evaluation to determine the most economical solution to the Town's water supply needs.

Town of New Gloucester, ME – Groundwater Modeling Studies. Conducted two studies, the first one evaluated a groundwater contamination problem caused by road salting operations. The second study involved evaluation of the potential effect of nitrate from a proposed development of a subsurface disposal system on groundwater supply wells.

Key Bank, Bingham, ME – Well Exploration. Designed and conducted an exploration program to locate a high yielding gravel pack well in Bingham, Maine. The site was located and a well was designed which ultimately produced 5000 gallons/minute. In addition, he designed the pump station, force main, and interconnection with the existing distribution system. The project was completed on a fast track within a 4-month period.

Lake Arrowhead Community and Cornish Water District, North Waterboro, ME – Water Supply. Conducted 2-1/2-inch test well programs for the Lake Arrowhead community and the Cornish Water District. Found new sand and gravel water resource. Work included the design of gravel pack wells, aquifer hydraulic analysis, numerical modeling for capture zone determination, the determination of travel times to well head, and the development of well head protection zones based on the draft well head protection regulations. The work required completing a drainage basin analysis quantifying the effects of a dam controlled lake on the groundwater resources within the drainage basin.

Town of Limerick, ME – Test Well Program. Conducted 2-1/2-inch Test well program for the Town of Limerick. The project is in the process ultimately developing a new production well, pump station, and well head protection zones.

Keefe Environmental Superfund Site, Epping, NH – Extraction Wells. Completed a 2-1/2-inch test well program to develop extraction wells for the Keefe Environmental Site that involved completing a 3-dimensional groundwater model to evaluate the performance of the existing extraction system, conduct a 2 1/2-inch test well program in a limited producing aquifer, and the design and development of new extraction wells to speed the cleanup process. Critical to managing the contaminant migration was the placement of a subsurface disposal system designed to discharge the wastewater treatment plant effluent. By utilizing the groundwater model, the operation of the subsurface disposal system was optimized with spray irrigation to greatly increase the effectiveness of the cleanup strategy.

KEY PERSONNEL

CORE DESIGN TEAM

ARCHITECTURE + INTERIOR DESIGN

GUY T. LABRECQUE

Vice President & Architect, AIA

PROFESSIONAL EXPERIENCE

CWS Architects	1998-present
SMRT Architects	1996-1998

REGISTERED ARCHITECT

State of Maine
State of New Hampshire
State of Massachusetts
State of Ohio
State of Rhode Island
State of Pennsylvania
State of Connecticut
State of New Jersey

EDUCATION

Montana State University School of Architecture
Master of Architecture 1989
Bachelor of Architecture 1989

LYNN PEPIN

Vice President & Director of Interior Design; MCID, LEED

PROFESSIONAL EXPERIENCE

CWS Architects	2015-present
Gawron Turgeon Architects	2001-2015
Orcutt Associates	1998-2001

CERTIFIED INTERIOR DESIGNER

State of Maine

EDUCATION

Atlanta College of Art
Bachelor of Interior Design 1997

KEVIN MORISSETTE

Architect, AIA, NCARB

PROFESSIONAL EXPERIENCE

CWS Architects	2013-Present
SMRT	2009-2012
Harriman Architects	2001-2007

REGISTERED ARCHITECT

State of Maine

EDUCATION

Norwich University, School of Architecture & Art
Master of Architecture 2003

KEY PERSONNEL

CORE DESIGN TEAM

ARCHITECTURE + INTERIOR DESIGN

VICTORIA NICHOLAS

Interior Designer

PROFESSIONAL EXPERIENCE

CWS Architects	2018-present
Stefura Associates, Inc.	2015-2018
Currier and Associates, Inc.	2014-2015

EDUCATION

Endicott College

Bachelor of Interior Design 2015

MAGGIE STANLEY

Architect & Construction Administrator, AIA

PROFESSIONAL EXPERIENCE

CWS Architects	2018-present
Goduti Thomas Architects	2010-2018

REGISTERED ARCHITECT

State of Maine

EDUCATION

Syracuse University; School of Architecture

Bachelor of Architecture 2006

THIRD DECADE IN MAINE

CWS Architects was founded in 1992 with a primary focus on building and preserving relationships with long term repeat clients who recognize the value of a vested partnership with their design team. As such, the firm has retained and supported the large majority of our clients for well over 10 years. These relationships have flourished through CWS Architects' commitment to finding creative, thoughtful solutions for every project and being responsive to our clients' budget, schedule and performance requirements. As part of the design process, the firm endeavors to carefully understand our clients' needs and goals just as we strive to balance them with our commitment to great design.

CWS Architects provides a broad range of project planning, design, documentation and administrative services. The firm offers full design services both in-house and through its extensive relationships with other owner-managed consulting design businesses. As such, each project is managed by business owners in every consulting design discipline stemming from CWS Architect's core business of architecture. As a privately held owner-run small business, a firm principal is in charge at every stage of every project.

As a matter of general practice, CWS ARCHITECTS strives to incorporate sustainable philosophies and green initiatives into the design concepts of every project to the highest level the Owner accepts. As part of our philosophy, sustainable concepts are paramount to the core of the planning process from concept and master planning through every detail of construction.

PROFESSIONAL SERVICES

- Architecture
- Interior Design
- Construction Administration

CWS Architects was founded in 1992 as a Maine corporation to serve its established clients in Maine and Northern New England with a hands-on approach to project design and management. The principals abide by the philosophy that great design is the product of great relationships. Hence, as part of the design process, we endeavor to carefully understand our client's needs and aspirations just as we strive to balance them with our commitment to great design.

STAFF

PRESIDENT | Benedict B. Walter, AIA
VICE PRESIDENT | Guy T. Labrecque, AIA
VICE PRESIDENT | George G. Lavigne, AIA
VICE PRESIDENT & DIRECTOR OF INTERIOR DESIGN | Lynn Ann Pepin, MCID, LEED ID+C
INTERIOR DESIGNER | Rebecca L. Ames
INTERIOR DESIGNER | Kaitlyn Burdick, MCID, LEED Green Associate
INTERIOR DESIGNER | Victoria Nicholas
ARCHITECT | Rebecca Bagley, AIA
ARCHITECT | Kevin Morissette, AIA
ARCHITECT | Binh T. Dang, AIA
ARCHITECTURAL DESIGNER| Lauren Goodwin
ARCHITECTURAL DESIGNER| Brian Porter
CONST. ADMINISTRATOR/ARCHITECT | Maggie Stanley, AIA
OFFICE ADMINISTRATOR/DEVELOPMENT ASSISTANT | Brandon Labrecque
CHIEF FINANCIAL OFFICER | Melissa Denis

REGISTRATIONS + CERTIFICATIONS

Architecture Registrations: Maine, New Hampshire, Massachusetts, Rhode Island, Pennsylvania, New Jersey, Georgia and Ohio. Interior Design Certifications: Maine

PROFESSIONAL QUALIFICATIONS

ORGANIZATION:	CWS Architects A Maine Corporation founded in 1992 Maine Licensed Architects Certified Interior Designers
REGISTRATIONS:	Maine, Massachusetts, New Hampshire, Rhode Island, Pennsylvania, New Jersey, Georgia & Ohio
CERTIFICATION:	Maine
PRINCIPALS:	Benedict B. Walter, President Guy T. Labrecque, Jr., Vice President George G. Lavigne, Vice President Lynn A. Pepin, Vice President
OFFICE:	264 US Route One, Suite 100-2A Scarborough, ME 04074 Tel: (207) 774-4441 www.CWSarch.com
BANKING:	Gorham Savings Bank Portland, Maine
INSURANCE AGENCY:	Clark Associates Greg Ritter, Agent

CWS DESIGN TEAM

GUY T. LABRECQUE

Vice President, AIA

Guy has been involved with many manufacturing and industrial projects of varying types and sizes. The project scopes have ranged from facility surveys and code compliancy evaluations to new build facilities and expansions. Guy is as accustomed to working within the common constraints of Food and Beverage industry as he is in completing large scale general industrial manufacturing facilities. It's a unique, process driven industry with each project requiring attention to specific needs.

EDUCATION

Montana State University, College of Architecture
Master of Architecture 1989

AFFILIATIONS

American Institute of Architects
National Council of Architectural Registration Board-Certificate Holder
SMCC Architect Professor

PROFESSIONAL EXPERIENCE

CWS Architects
Architect/Vice President
1998-present

SMRT Architects
Intern Architect
1996-1998

Registered Architect:
State of Maine
State of New Hampshire
State of Massachusetts
State of Ohio
State of Pennsylvania
State of Rhode Island
State of Connecticut
State of New Jersey

PROJECT EXPERIENCE

MAINE INTERNATIONAL COLD STORAGE FACILITY - Planning Board Approvals and Design Development Documentation services related to a new 107,387 square foot cold storage facility. 90,000 square feet of the building will be utilized for loading docksand cooler space providing 20,000 pallet positions. The remaining portions of the building will house the accessory mechanical as well as aproximately 10,000 SF of administreation space. Portland, ME

COCA-COLA FREESTYLE AND R&D LAB: 250,000 SF addition and renovation designed to accommodate new technologies and additional material handling machinery. Atlanta, GA

COCA-COLA PACKAGING PLANT: 225,000 SF addition and renovation designed to accommodate new

CWS DESIGN TEAM GUY LABRECQUE

PROJECT EXPERIENCE

GOOD SHEPHERD FOOF BANK, DISTRIBUTION CENTER – Two Story, 46,000 square foot food distribution center and 12,000 square foot main administrative office space. The facility houses common shipping and receiving bays, pallet racking systems, as well as cold storage and freezer spaces. The building is constructed as a high bay structure and utilizes common insulated metal panels for the roof and wall enclosures. Auburn, ME

GOOD SHEPHERD FOOD BANK, MAIN FREEZER EXPANSION – CWS was asked to provide the design assistance for a 2,000 s.f. freezer expansion to the main facility. The freezer accommodates additional high-bay racking and provides direct access to and from the main warehouse spaces.

BILLERICA- PHASE 3 WATER RESOURCES RECOVERY FACILITY CAPITAL IMPROVEMENTS AND PUMP STATION UPGRADES: The project consisted of the removal and replacement of an existing 2-story Operations Building, interior finishes replacement and exterior repairs to an existing Administration Building and miscellaneous improvements to the treatment plants Compost Building. Billerica, MA.

WALPOLE GROUNDWATER PROCESSING FACILITY: 3,600 SF processing building for the remediation of a large brownfield site in Walpole, MA

WARREN WASTE WATER TREATMENT FACILITY: Interior and exterior renovations to an existing 18,000 SF Operations Building, the construction of a new 6,000 SF Sludge Pump building and the construction of a new 625 SF Screenings building as part of a wholesale upgrade to the entire treatment facility.

NUTRISICS - MILLER/COORS: A renovation and multistory tool addition impacting between 6,200 SF and 7,200 SF of area within an existing facility for a by-product salvage and fish food production processing facility. Madison Township, OH

IDEXX OFFICE AND LABORATORY FIT-UP –Phases II, III and IV: Several interior renovation projects totaling 69,000 SF of area for general office space and various laboratory uses. Shipping and material handling areas were improved while freezer storage was expanded. Westbrook, ME

CWS DESIGN TEAM

LYNN PEPIN

Vice President & Director of Interior Design
MCID, LEED ID+C

Lynn focuses on developing Client relationships through understanding their organizations culture, values and principles. During project programming she learns about occupants' needs and behaviors that currently affect their performance, well-being and social collaboration. With her extensive knowledge and design of human-centered interior environments she plans how future growth will improve and evolve these elements. She transforms built interior environments with her inspired creativity and thoughtful selections of building materials and finishes. Lynn creates unparalleled interiors by integrating furnishings, fixtures, artwork, interior way finding and custom graphics.

EDUCATION

Atlanta College of Art
Bachelor of Interior Design 1997

AFFILIATIONS

National Council for Interior Design Qualifications;
Maine Interior Design Association

PROFESSIONAL EXPERIENCE

CWS Architects
Director of Interior Design
2015-present

Gawron Turgeon Architects
Certified Interior Designer
2001-2015

Orcutt Associates
Intern Interior Designer
1998-2001

Certified Interior Designer: State of Maine

PROJECT EXPERIENCE

BANGOR SAVINGS BANK - FOUNDERS PLACE Interior Design, Furniture, Fixtures and Equipment, Artwork, interior way finding signage and custom graphics services were provided. The campus consists of three buildings; a renovated historic 5-stories, 35,500 sf corporate headquarters at 24 Hamlin Way and new 5-stories 120,000 sf operations center at 11 Hamlin Way buildings. The interior environments at Founders Place support employees' health and well-being, promote social connections within the workplace and enhance collaboration. The open flex work spaces are adjacent to collaborative meeting rooms, private offices, kitchenettes and print/work areas. Employees have shared social spaces throughout with access to Cafe, exterior patios, fitness center and green spaces. Bangor, ME.

SAGAMORE VILLAGE COMMUNITY CENTER - Portland Housing Authority: In process of re-planning the Sagamore Village Community Center. The objective is to create a space that would allow all of their services to come together under one roof. The proposed plan includes an addition between the existing Sagamore Village Community Center, their local food pantry and Head Start Suite. Portland, ME

ROBERT V. CONNORS ELEMENTARY SCHOOL INTERIOR FURNISHINGS, GRADES PRE-K-6 Selected interior furniture, fixtures and equipment for the 142,000sf school to accommodate 888 students. The school features six Pre-K classrooms, 42 standard classrooms with collaborative learning arrangements, specialty classrooms, PT/OT suite, Library, Art, Music and Band, STEM labs, Stage opening to both the Gymnasium and Cafeteria, Health Clinic, teachers and student support spaces and administrative suite.

RSU #64 CENTRAL COMMUNITY ELEMENTARY SCHOOL INTERIOR FURNISHINGS, GRADES PRE K THROUGH 5 - Furnishings Consultant services were provided for the new two-story, 93,800 square foot school accommodating 581 students Kindergarten through 5th grade plus a Pre-K program. The consolidated elementary school includes students from Bradford, Corinth, Hudson, Kenduskeag and Stetson. The program features standard classrooms with seating for 20 students at collaborative team tables and teacher station. Life Skills and Autsim classrooms were arranged in zones that can be reconfigured based on the individual students' needs. Specialty classrooms and support spaces include library, art, music, cafeteria, team gathering and computer lav. The elementary school's administrative offices along with RSU #64 Superintendent's Offices are located in the building. Corinth, ME.

CWS DESIGN TEAM

KEVIN MORISSETTE

Architect, AIA, NCARB

Kevin has experience with many different types of projects both big and small, ranging from traditional to unique. Each project creates challenges but also opportunity. Kevin has been able to take these opportunities along with careful detailing and team work to provide creative, meaningful design. With over ten years of experience working closely with clients and contractors, Kevin has completed many successful projects that meet program requirements, contract schedules, and exceed expectations.

EDUCATION

Norwich University, School of Architecture & Art
Master of Architecture 2003

AFFILIATIONS

American Institute of Architects
Former City of Lewiston Planning Board Member

PROFESSIONAL EXPERIENCE

CWS Architects
Architect
2013-Present

SMRT
Intern Architect
2009-2012

Harriman Architects
Intern Architect
2001-2007

Registered Architect:
State of Maine

PROJECT EXPERIENCE

MAINE INTERNATION COLD STORAGE FACILITY - Planning Board Approvals and Design Development Documentation services related to a new 107,387 square foot cold storage facility. 90,000 square feet of the building will be utilized for loading docksand cooler space providing 20,000 pallet positions. The remaining portions of the building will house the accessory mechanical spaces as well as approximately 10,000 SF of administration space. Portland, ME

PROJECT EXPERIENCE

BANGOR SAVINGS BANK - BANGOR WATERFRONT CAMPUS: Interior Design, Furniture, Fixtures and Equipment, Artwork and Branding Signage services were provided for the waterfront campus in Bangor. Their corporate offices are located within 4-stories at 24 Hamlin Way in a 33,000 sf building. The new 5-story, 120,000 sf operations center at 11 Hamlin Way support operation departments, conference and training center, wellness center and collaboration cafe. Bangor, ME.

HUSTON COMMONS - Avesta Housing: Huston Commons consists of 30 new living units which provide permanent, supportive housing for homeless individuals with chronic medical conditions. Along with providing each new tenant a stable living environment, Bishop Street offers on-site outpatient care for individuals dealing with factors contributing to their homelessness and to reduce trips and cost of emergency visits. Portland, ME

INDEPENDENCE ASSOCIATION - Adult Day Care Center and Office Headquarters: 24,000 sf, complete exterior and interior renovation including FF&E coordination to a vacant two-story office building. This particular building was selected by the owner to consolidate three separate buildings under one roof. Existing office furniture was re-purposed throughout the facility and supplemented with new furniture, fixtures, and equipment. The building exterior required new window units, new siding and insulation repairs. The first floor holds the day care program which includes support staff offices, a therapy gym, showering facilities, activity spaces, and dining area with a fully accessible kitchen. The second level is the administrative office suite for the organizations staff which includes a custom built reception desk and mail area, support staff offices, training/ meeting room(s), and an open office area consisting of 18 collaborative workstations. Brunswick, ME

GRAFTON COUNTY HOUSE OF CORRECTIONS - 90,000 SF facility housing minimum, medium and special needs inmates. Operationsal cost savings methods include high efficiency boilers, geothermal heating and cooling, as well as daylightint were integrated into all design aspects. North Haverhill, NH - (project completed at SMRT)

ALERE (FORMERLY INVERNESS MEDICAL) - 65,000 SF facility for research and development inlcuding biosafety laboratories, tissue culture rooms and biotest clean room facilities. Scarborough, ME - (project completed at SMRT)

CWS DESIGN TEAM

MAGGIE STANLEY

Architect & Construction Administrator, AIA, NCARB

As Construction Administrator and Architect at CWS, Maggie works with project architects, owners, consultants and contractors to ensure that the construction process goes smoothly and as planned. Navigating the many needs and processes of the multiple parties involved in design and construction poses a challenge that Maggie enjoys working through while prioritizing the client's needs for an efficient and successful building.

EDUCATION

Syracuse University; School of Architecture
Bachelor of Architecture 2006

AFFILIATIONS

Member:
City of Portland-Planning Board Member
American Institute of Architects

PROFESSIONAL EXPERIENCE

CWS Architects
Architect
2018 - Present

Goduti Thomas Architects
Architect
2010-2018

Registered Architect:
State of Maine

PROJECT EXPERIENCE

BANGOR SAVINGS BANK – FOUNDERS PLACE: BANGOR SAVINGS BANK: New 5-story, 116,000 square foot corporate headquarters designed to support operation departments, conference and training centers, wellness center, and a collaboration café, as well as a new 5 story, 443 space Parking Garage with solar panels on the roof. These facilities incorporate extremely efficient envelope and building systems that will lead to substantially cost-effective operations for decades to come. Bangor, ME

PROJECT EXPERIENCE

58 BOYD STREET APARTMENTS (under construction) – 58 Boyd St is a new construction apartment and mixed use building providing affordable housing, a community area and a retail space for a community nonprofit. It is a 6 story building with efficient operations and a solar array on the roof. Portland, ME

ST. FRANCIS SENIOR APARTMENTS, PHASE 2 – St. Francis is new three story wood framed construction, affordable senior housing. Phase 1, completed in 2014, comprised of 40 one bedroom units, a community room, and accessory offices for the building management. Phase 2, completed in 2019 created an additional 18 one bedroom units connected to the phase one building for a continuity of systems and circulation. Both phases included a mix of Accessible, Type A and Type B ADA units for seniors.

SOUTHGATE HOUSE - Southgate House is a family housing project that is comprised of 2 buildings on one site. Building one is a historic farmhouse that utilized National Park Service Preservation tax credits in the adaptive re-use of the building into 8 one bedroom apartment units. Building two is new construction of 32 units with mixed bedroom counts. Building two was created with a holistic site design in mind. It is set back on the site with an architectural form that is reminiscent of a large barn as the secondary form to the historic farm house. Scarborough, ME (project completed at Goduti Thomas Architects)

SOMERSET PLACE - Historic preservation and adaptive re-use of a decommissioned high school into 28 units of affordable senior housing for the Brewer Housing Authority. Common corridors and an auditorium were preserved and restored utilizing the National Park Service's historic guidelines. Classrooms were converted into one bedroom apartments with varying Accessible, Type A and Type B ADA unit types, while also preserving historic detailing to meet preservation standards. Brewer ME.

CWS DESIGN TEAM

Victoria Nicholas

Interior Designer

Victoria is an Interior Designer specializing in interior documentation, renderings, Furniture, Fixtures and Equipment, artwork and branding packages. She continues to build her knowledge and expertise with interior design detailing, FFE selections and procurement. She has worked on numerous school renovations ranging from Pre-K-12 elementary and high schools to college campuses throughout the greater Boston area and recently expanded her portfolio into the corporate market sector.

EDUCATION

Endicott College
Bachelor of Science Interior Design 2015

AFFILIATIONS

Member: Maine Interior Design Association

PROFESSIONAL EXPERIENCE

CWS Architects
Interior Designer
2018-Present

Stefura Associates, Inc.
Junior Designer
2015-2018

Currier and Associates, Inc.
Intern/Design Assistant
2014-2015

PROJECT EXPERIENCE

MAINE INTERNATION COLD STORAGE FACILITY - Planning Board Approvals and Design Development Documentation services related to a new 107,387 square foot cold storage facility. 90,000 square feet of the building will be utilized for loading docksand cooler space providing 20,000 pallet positions. The remaining portions of the building will house the accessory mechanical spaces as well as approximately 10,000 SF of administration space. Portland, ME

PROJECT EXPERIENCE

ROBERT V. CONNORS ELEMENTARY SCHOOL INTERIOR FURNISHINGS, GRADES PRE-K-6 Selected interior furniture, fixtures and equipment for the 142,000sf school to accommodate 888 students. The school features six Pre-K classrooms, 42 standard classrooms with collaborative learning arrangements, specialty classrooms, PT/OT suite, Library, Art, Music and Band, STEM labs, Stage opening to both the Gymnasium and Cafeteria, Health Clinic, teachers and student support spaces and administrative suite.

BANGOR SAVINGS BANK - BANGOR WATERFRONT CAMPUS: Interior Design, Furniture, Fixtures and Equipment, Artwork and Branding Signage services were provided for the waterfront campus in Bangor. Their corporate offices are located within 4-stories at 24 Hamlin Way in a 33,000 sf building. The new 5-story, 120,000 sf operations center at 11 Hamlin Way support operation departments, conference and training center, wellness center and collaboration cafe. Bangor, ME.

NORTH MIDDLESEX REGIONAL HIGH SCHOOL: Selected and procured interior furniture, fixtures and equipment for the new 180,530 square foot school to accommodate approximately 1,000 students, grades 9 through 12. The school features 32 general classrooms, 8 science labs, 14 specialty classrooms. The specialty classrooms included band and chorus, a piano lab, art, robotics, CAD lab, television studio, stem lab, tech labs, and computer labs. The project also included furnishings for the school's athletics suite, administration and special education office suites, custodial suite, cafeteria, and media center. (project completed with Stefura Associates, Inc.) Townsend, MA

GRANBY ELEMENTARY SCHOOL: Involved in furniture, fixtures and equipment selection during the SD-CD/CA phase for the renovation of an existing 69,000 square foot East Meadow Elementary school and a new addition to accommodate 430 students, grades Pre-K through 9. The school features 22 classrooms and 8 special education classrooms. (project completed at Stefura Associates, Inc.) Granby, MA

GIBBS MIDDLE SCHOOL In progress: Invloved furniture, fixtures and equipment during the SD-CD/CA phase for the renovation of the 69,000 square foot school to accommodate 500 students, grade 6 only. The school consists of a cluster classroom system, 6 clusters in total with 4 classrooms per cluster as well as specialty classrooms for art, theater, technology labs, a media center, and the cafeteria. (Project completed at

REFERENCES

ERIN COOPERRIDER - Director of Development
Community Housing of Maine
309 Cumberland Ave., Portland, ME 04101
(207) 879-0347

MARK RYDER - Executive Director
Morrison Development Center
60 Chamberlain Road, Scarborough, ME 04070
(207) 883-6680

JOHN MALLIA - Chief Executive Officer
Bill Dodge Auto Group
1 Saunders Way. Westbrook, ME 04092
(800) 657-1090

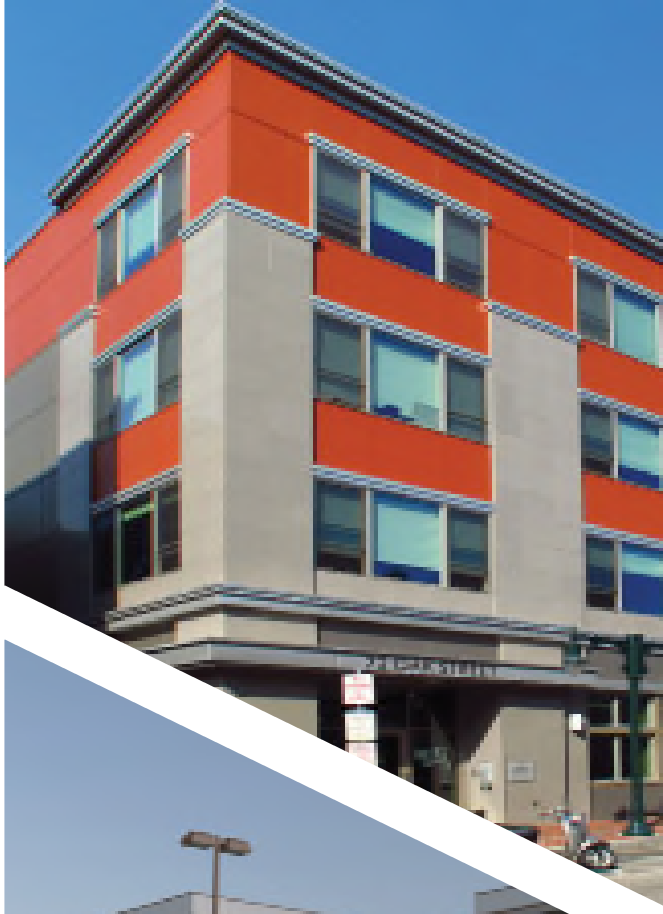
JUDYLYNN MONACO - Former Project Manager
DaVita Dialysis Services
118 Granite Street, Medfield, MA 02052
(617) 817-9150

MARC FOURNIER - Former Vice President of Support Services
Southern Maine Health Care
P.O. Box 626, Biddeford, ME 04005
(207) 468-2307

CYNTHIA TAYLOR - President
Housing Initiatives of New England
36 Union Wharf, Portland, ME 04101
(207) 774-8812

DANA TOTMAN - Executive Director
AVESTA Housing
307 Cumberland Avenue, Portland, ME 04101
(207) 553-7777

PAUL URENECK - Senior Vice President
Boulos Property Management
One Canal Plaza, Portland, ME 04101
(207) 772-1333



MAINE INTERNATIONAL COLD STORAGE FACILITY

PORTLAND, ME

CWS was asked to design an approximate 107,000 square foot cold storage facility along the historic working waterfront of Portland, Maine. A large single-story structure with varying roof heights which included common business administration space, mechanical rooms, maintenance space, the main cold storage spaces and shipping and receiving docks. Being part of the historical fabric in downtown, many consideration and design decisions were made to merge what may typically look like a large box into a well-placed and aesthetically pleasing building. Working with the City of Portland, surrounding neighborhoods, and fisherman, the design and construction team were able to meet and exceed the requirements and standards that were required. By achieving these goals, we provided the building owner and operator with an energy efficient, durable, working building that will continue to increase commerce and bring added vitality to the western end helping to grow redevelopment of the area.

OWNER
Maine Port Authority

PROJECT COST
$TBD

PROJECT PERSONNEL
Guy Labrecque
Kevin Morissette
Vicky Nicholas
Brian Porter

COLA-COLA PACKAGING PLANT

ATLANTA, GEORGIA

In 2009, CWS received a commission to assist Coca-Cola Corporation with a large addition and renovation to their syrup and packaging facility in Atlanta, Georgia. The need for the expansion was prompted by newly developed syrup distribution, processing and packaging methods and technologies. Many of these technologies were still in development requiring complete flexibility within our designs. The large expansion area houses injection molding machines as well as warehouse and distribution space. A large portion of the building consists of an automated storage and recovery system that rises to a height of one hundred and twenty-five feet.

This project is our very best example of how well we can communicate and coordinate. This project required complete detailed coordination with better than twenty-five design professionals around the world. Designs for the equipment within the building were six months behind the design of the building affecting much of the logistical design.

The owner's team consisted of plant personnel as well as two management departments. All of these parties had design needs that needed to be developed and brought forward into the design. Many of our projects require similar levels of involvement and without question a great deal of coordination. This Coca-Cola project is a perfect example of just how capable CWS can be in this regard.

This multi-phased project required constant coordination, attention and plant interaction allowing the facility to remain in complete operation throughout the construction process. In order to maintain contact and share design concepts with the ownership team and engineering firms, we utilized internet conferencing technologies and leading project management software developed just for this project. The design and construction teams were able to maintain complete project control and avoid and potential communication breakdown.

OWNER
Coca-Cola Refreshments

CONTACT
Mike Jacobs
Principal Engineer
(404) 676-0199

PROJECT COST
$240,000,000.00+

COLA-COLA FREESTYLE OFFICE AND R&D LAB

ATLANTA, GEORGIA

As part of the on-going relationship with Coca-Cola, CWS became involved with the relocation of the Freestyle program group to a nearby 54,000 sf tenant space within the Northyards complex. The relocation included moving 175 engineers, software developers and adminstration staff as well as the relocation and expansion of the R&D and testing lab portions of the department. The projects intent was to incorporate better access and communication throughout the department. A great deal of time and effort was placed upon the design of the various labs assuring that the utilities within each space were properly configured to meet the needs of the engineering teams utilizing the lab. A system of unistru support walls were utilized for the utility runs allowing easy access and flexibility for future growth and alteration.

The office fit-up included a combination of open office modular furniture coordination, as well as dedicated office and meeting spaces. All conference rooms were fit-up for worldwide presentation use. A dedicated space was created for product sales and display providing a means of presenting future commercial and residential dispensing appliances.

OWNER
Coca-Cola Refreshments

CONTACT
Mike Jacobs
Principal Engineer
(404) 676-0199

PROJECT COST
$2,700,000.00

PROJECT PERSONNEL
Guy Labrecque
Rebecca Ames

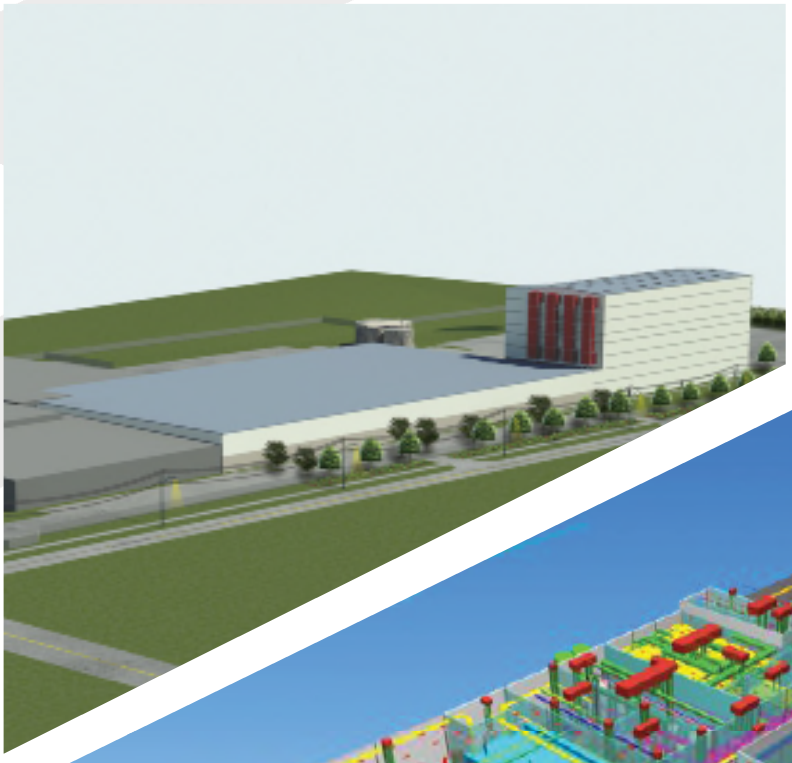
COCA-COLA

COLUMBUS, OH

The expansion and renovations to the Columbus plant was the second phase in re-automating the fountain distribution system for this Atlanta based beverage manufacturer. Having completed the Atlanta expansion, establishing redundancy in the supply chain became the logical next step. The requirements of the new process line, packaging systems and process flow equipment all pulled forward from Atlanta to Columbus as 186,000 square feet of new building footprint was planned and designed. The need to incorporate an automated storage and recovery system on the distribution end of the process was also brought forward to the Columbus layout.

CWS continued to work closely with Owner representatives and engineers from around the world assuring the highest quality of design, assembly and implementation. The project implemented a sustainability design basis intended to achieve the same water savings that were recognized in Atlanta. Working in tandem with a Construction Manager we were once again able to maintain and monitor construction costs.

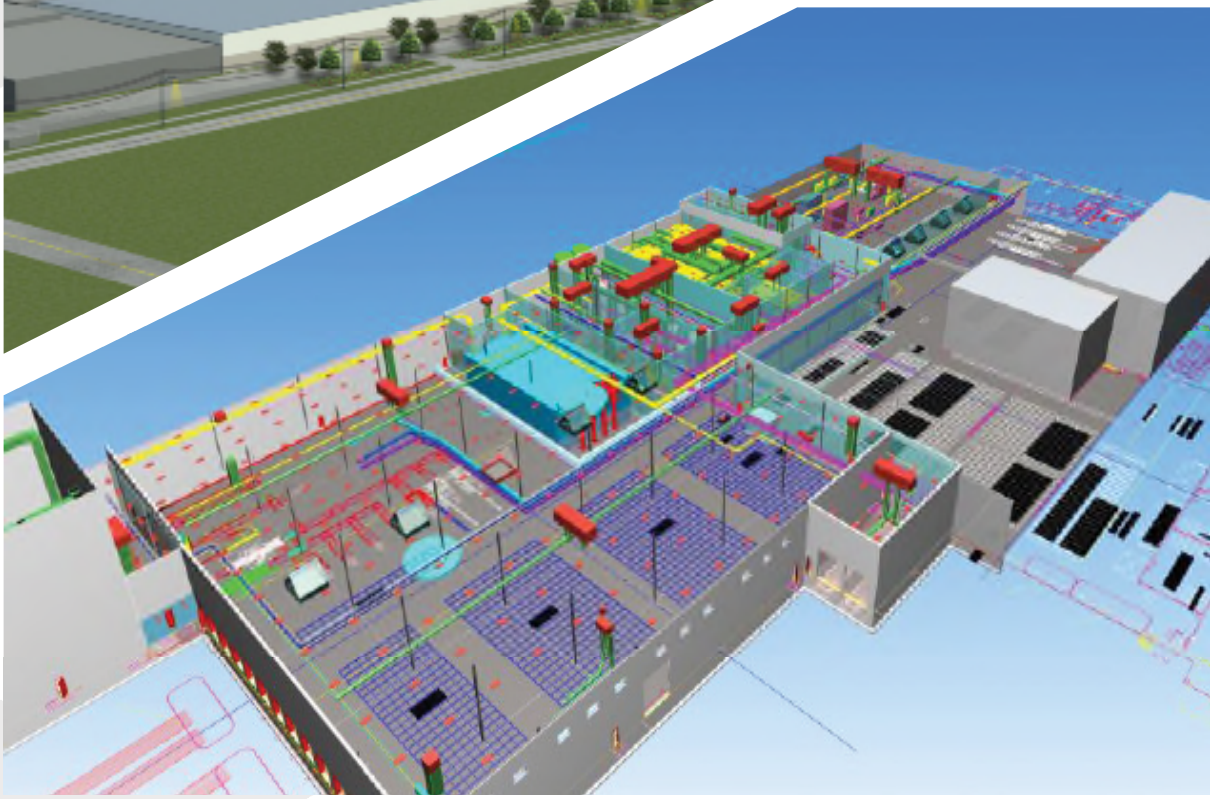
The technical nature of these projects has required a great deal of CAD software management. Working with many firms using several CAD packages has meant utilizing Navisworks to merge each package into one common platform. This in turn accommodated collision detection and utility space allotment during the deign process setting up understood paths during construction avoiding conflict and speeding up the installation process.



OWNER
Coca-Cola Corporation

PROJECT COST
$200,000,000

PROJECT PERSONNEL
Guy Labrecque
Mike Pednault



COMPANY PROFILE

Allied Engineering
Structural Mechanical Electrical Plumbing

100% Employee Owned

LOCATION OF OUR OFFICE
160 Veranda Street, Portland, ME 04103

DATE OF INCORPORATION:
January 24, 1958; State of Maine, Corporation

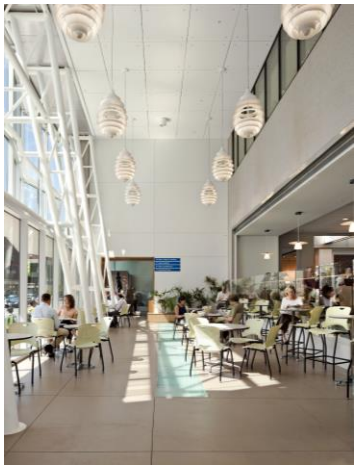
BACKGROUND
Allied Engineering, Inc. **(AEI)** has been providing multi-discipline engineering support to our clients since 1958. Our experience lies in our knowledge and understanding of Structural, Mechanical, Electrical and Technology systems for new buildings and renovation design projects. Our expertise is demonstrated in our attention to detail, integrated designs, and our excellent reputation. Allied Engineering is 100% Employee Owned (ESOP).

AEI has the advantage of having most disciplines under one roof. We are a team player, working for architects as well as leading full-service teams as a prime consultant. We flourish in all project delivery methods, including traditional design-bid-build, design-build, and construction management.

Today's complex buildings require leading-edge systems engineering to optimize performance in both efficiency and use. As projects increase in complexity, communicating designs and design changes among mechanical, electrical, and plumbing (MEP) engineers and their extended teams, including architects and contractors, becomes more important. **AEI** utilizes Autodesk Revit and Autocad design tools to improve productivity, accuracy, and coordination.

OUR PRACTICE/SERVICES OFFERED

- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Plumbing Engineering
- Technology Engineering
- Fire Protection
- Environmental
- Construction Administration



ENERGY STAR PARTNER

NESEA MEMBER
NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

IAN A. MACDONALD, P.E.

Allied Engineering
Structural Mechanical Electrical Plumbing

Mechanical Co-Department Head
Senior Mechanical Engineer

Ian A. MacDonald, P.E. is a leader in designing complex HVAC and plumbing systems for large municipal/government, correctional, healthcare, commercial and educational buildings. During his career of over thirty years, his work has included buildings for medical, institutional, commercial, and industrial uses throughout New England. Ian is an energy saving and green design expert. He is experienced in both traditional Design/Bid and Design/Build construction delivery methods. Ian's early experience with equipment sales and installation provides him with a practical viewpoint gained from field experience with many operating systems. He completed the ASHRAE Professional Development Course on Building Commissioning and is a **LEED™** Accredited Professional.

Education, Registration, and Affiliation

University of Maine - B.S. in Mechanical Engineering Technology – 1984
Northeastern Univ. - Advanced Studies in Construction Law and Auto Temp. Controls
Registered Professional Engineer – ME, NH, VT, NY, CO, and MA.
Member - American Society of Heating, Refrigeration and AC Engineers (ASHRAE)
Member – American Society of Healthcare Engineers (ASHE)
Member - Maine Indoor Air Quality Council
ASHRAE Certified Healthcare Facility Design Professional.
LEED™ (Leadership in Energy and Environmental Design) Accredited Professional

Presentations

- MIAQC - Fresh Air: Optimal HVAC Management for Improved Health, 2013
- MEREDA Deep Energy Retrofits, 2011 (Coastal Maine Botanical Gardens)
- ISANNE Fall 2010 Presentation Sustainable Preservation
- NNECERAPPA 2010 - Geothermal Heating and Cooling (Colby College)
- ASHRAE 90.1 HVAC Revisions, 2003 and 2006

Employment History

2005 – Present **Allied Engineering** - Principal
2004 – 2005 M/E Engineering, PC - senior mechanical engineer
2000 – 2004 **Allied Engineering** - senior mechanical engineer
1989 – 2000 SMRT, Inc. – Principal, mechanical engineer
1986 – 1989 Richard D. Kimball Company – mechanical engineer
1984 – 1986 W.D Griffin Company, Inc. – HVAC sales engineer

Thornton Tomasetti

BECKER STRUCTURAL ENGINEERS

About Thornton Tomasetti

Becker Structural Engineers was founded in 1995 and is a full service structural consulting firm with a staff of twenty-five. In April 2019, Becker joined Thornton Tomasetti, expanding its capabilities and expertise. The two firms share a proactive and integrative culture. We pursue questions to arrive at the smartest solutions for our clients. This results in an engineering approach that combines classical engineering theory and practical experience with versatility and out-of-the-box thinking-and ultimately better buildings for our clients and communities.

Andy Caulfield

Leers Weinzapfel Associates

Courtesy COOKFOX

Structural Engineering

We collaborate with architects, owners and builders to design elegant solutions for projects of all types – from the tallest buildings and longest spans to inventive structures and expansions. We seek the best balance among the demands of form, function, sustainability, constructability, schedule and budget.

Construction Engineering

We work closely with designers, developers, contractors, fabricators and erectors to efficiently move a project from concept to close-out. Our services include integrated design and fabrication modeling, connection design, erection engineering, crane engineering, field engineering and site representation.

Façade Engineering

We apply our expertise in systems and materials to integrate façade and structural design in new buildings, renovations and recladding projects. We help solve design challenges, improve constructability, maximize efficiency and increase security. Through 3D parametric and building information modeling we can work with manufacturers to design, consult, engineer and install systems.

Sustainability

We partner to integrate green solutions into the planning, design, construction and operation of buildings to reduce their environmental impact. Our services include sustainable design strategies, energy analysis, green building certification consulting, sustainability analysis and upgrades for existing structures, and education and training.

Renewal

Our experts provide building owners with a wide range of envelope, structural, mechanical, electrical, plumbing and fire protection services. We conduct performance investigations, condition assessments, due diligence surveys, feasibility studies and peer reviews. We design repairs, renovations and alterations and oversee their execution.

Forensics

We assist attorneys, property managers, owners, contractors / manufacturers and design professionals with engineering and architectural forensic services. As design professionals, we evaluate for standard of care; as forensic specialists, we seek root cause; as problem solvers, we seek resolution. We provide reports, expert testimony, calculations / drawings and computer models and simulations.

Property Loss Consulting

We help insurers analyze pre- and post-loss risks and claims. Our architects, structural engineers and MEP experts provide investigation of damage including cause and origin analysis, engineering assessment for reinstatement of damaged buildings, building code upgrade analysis and specialized claim response. We also provide expert reports and testimony based on our investigations.

Applied Science

Our engineers and scientists apply technologies and expertise in solid and fluid dynamics, mechanics, materials, acoustics, stochastics, software development and computational simulation to engineer solutions to intractable problems. We perform research, development and design to manage risks to life and structures in buildings, infrastructure and vehicles.

Protective Design

We provide physical security analysis, advice and design to architects, owners, developers and public agencies. We assess vulnerability and provide balanced, economical mitigation. We collaborate to achieve solutions that deliver the required level of protection while upholding project aesthetic and budgetary goals.

Transportation

We provide analysis, design, inspection, evaluation, monitoring and rehabilitation for a variety of projects including aviation, bridge, waterfront, rail, intermodal, street and tunnel. Our expertise in structural, civil and geotechnical engineering supports client needs for both new and existing transportation structures.

Thornton Tomasetti
BECKER STRUCTURAL ENGINEERS

Structural Engineering Services

As structural engineers, we collaborate with architects, owners and builders to achieve elegant structural solutions to meet the rigorous demands of the most technically challenging projects. Thornton Tomasetti's Structural Engineering practice provides a complete range of structural design services for clients worldwide on projects of all sizes and complexity – from designing some of the world's tallest buildings and longest spans, to engineering the most ambitious yet small-scale structures. In all our work, we continually challenge convention while striving to address the demands of constructability, sustainability, budget, function and aesthetic vision.

Thornton Tomasetti

Steve Rosenthal

Andy Caulfield

Robert Benson

New Design

Designing structural frames for new buildings is a key focus of our practice. We work collaboratively with architects, mechanical engineers, and contractors to propose, study, and develop structural framing system alternatives for each project. Our integrated approach to developing the optimal structure considers not only material quantities, but also the project's economic, functional, and aesthetic needs.

Alteration and Renovation

Our services range from supporting programs for tenant or owner modification and upgrades, to full gut-renovations, modernization or adaptive re-use. We develop solutions that involve seismic upgrade, structural reinforcement for support of an expansion or change in use, and strengthening for blast force resistance. We have expertise in historic and vintage structural systems, applying our extensive knowledge of the behavior of construction systems to arrive at smart solutions.

Service Integration

A successful building project optimizes structural systems, building façade, and architectural and mechanical systems. Our integrated services in building structure, façade engineering, sustainability, and connection design uniquely position us to serve our clients with a holistic approach. To our clients this means a better building at a cost savings and reduced schedule.

Capabilities

All of our structural designs are developed with building information models, using custom interoperability tools that enable us to work with virtually any design software. This interoperability and use of BIM enhances efficiency, accelerates delivery time, reduces change orders and preserves the design integrity as it moves across software platforms.

Project Delivery

Our project delivery strategy is customized to meet specific client needs. For design-bid-build, design-build, integrated project delivery or a hybrid, we understand the benefits and limitations of each approach and advise our clients when appropriate. We incorporate advanced detailing, saving time and ensuring accuracy of deliverables for the contractor and fabricator, and erection engineering and site logistics support to optimize the construction process.

Balancing Program and Practicality

Combining the latest technologies with proprietary tools designed by our in-house R&D incubator, our engineers excel in optimizing structural system designs in order to meet architectural and cost objectives and to simultaneously simplify construction. We enable the design team to explore and evaluate design considerations at the earliest stages through interoperability and data visualization tools that deliver rapid iterations. We incorporate this knowledge to optimize complex and award-winning projects throughout the world.

Thornton Tomasetti
BECKER STRUCTURAL ENGINEERS

Sustainability Services

Courtesy Edenworks

Edenworks Urban Farm Prototype, Brooklyn, NY

We Provide

Building Analytics
Comfort Analysis
Daylight Analysis
Schematic Energy Analysis
Advanced Energy Modeling
Parametric Daylight & Energy Analysis
Façade Thermal & Hygrothermal Analysis
Renewable Energy Potential
Life-Cycle Analysis
Embodied Carbon
Water Balancing

Project Certification
Passive House
Living Building Challenge & Petal Certification
Net Zero / Net Positive
LEED
WELL
GreenPoint Rating
BREEAM
SITES
Fitwel

Thornton Tomasetti's Sustainability practice is passionate about working with building owners, managers, designers, builders and occupants to create efficient, high-performance, climate-responsive buildings and communities. Our team offers a comprehensive selection of sustainability services led by a multidisciplinary, LEED-accredited staff. Our building certification skills are among the best internationally and our approach focuses on seeking the most advantageous solution for each project. We embrace sustainable-driven strategies to meet comfort targets and create healthy environments that prioritize passive over mechanical systems with an eye toward life cycle-driven solutions that support the project budget and goals. For clients at the forefront of sustainability, we consult on achieving Passive House Certification, Net Zero Energy Buildings, Living Building Challenge design, Embodied Carbon Optimization and BECx Commissioning. Through early collaboration with project members, we bring whole-systems thinking to our projects to achieve a balance among economic, social and environmental factors.

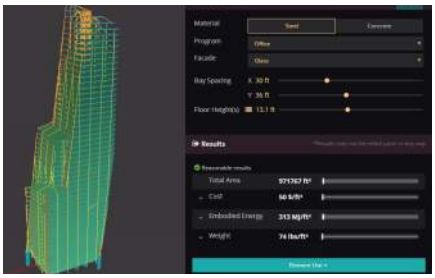
A Smart and Collaborative Approach
We work with the architect and building owner at the inception of every project to help create a sustainability vision and turn it into a reality. Our specialists evaluate buildings holistically to determine the relative environmental pros and cons of particular design decisions as well as associated economic parameters. We collaborate on the design, construction and operation of sustainable buildings to provide innovative solutions that greatly reduce operational costs and contribute to more resilient buildings. We combine creative thinking with time-tested MEP knowledge to help clients prioritize architectural solutions for performance, creating opportunities to right size, if not eliminate, MEP systems that result in efficient and highly effective solutions for comfort, reliability and optimized design.

Thornton Tomasetti
BECKER STRUCTURAL ENGINEERS

Technology in Sustainability

Commitment to Innovation

Thornton Tomasetti has prided itself on providing clients with creative and practical (real world) solutions. We live by our motto, "To be the Global Driver of Change and Innovation in Our Industry." We believe several unique aspects of Thornton Tomasetti's pedigree and culture contribute to this. At 1,300 employees, it's not just the number that matters, but how those resources work as one. At Thornton Tomasetti those resources work as "one brain" when we take on a project. You will be getting far more than the people and experience listed in this proposal. If we are selected, we will work closely with you to identify both practical and innovative solutions to achieve your sustainability goals.



Using our Embodied Carbon Calculator tool, In the snapshot above, we input our design into Asterisk, to rapidly provide the embodied energy output per square foot of the building.

Net Zero Design

We align early with building owners and design teams to establish the path forward for projects targeting Net Zero Energy and Net Zero Water. We drive loads down, and performance up, and model the building and its systems to help direct cost-effective approaches to achieve net zero. Coastal Maine Botanical Gardens, Bosarge Family Education Center in Boothbay, ME. Thornton Tomasetti served as the LEED consultant and owner's sustainability representative. The building exceeded project goals and achieved net-zero energy after the first year of operation.

Life-Cycle Assessment

We collect and evaluate quantitative data on the inputs and outputs of material, energy and waste flows associated with the building over its entire life cycle so that its whole-life environmental impacts can be determined.

Our Tools

Water Balance Calculator

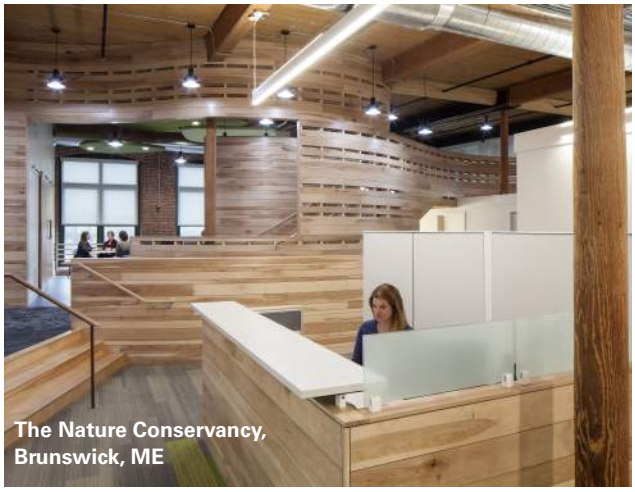
This new, innovative tool is currently under development and supports water conservation and the reduction of potable water use in the built environment. This tool enables Thornton Tomasetti to assist owners, developers and design teams in weighing the benefits and tradeoffs of different approaches to water as an onsite resource in building design, thereby improving regional water sources.

Embodied Carbon Efficiency Tool

In 2012, we began measuring the embodied carbon footprint of our engineering projects, developing a database fed by our own embodied energy and carbon calculator. To assist in this goal Thornton Tomasetti developed an "Embodied Carbon Efficiency Tool" which lets us calculate and visualize embodied carbon contents of most structures in real time. When combining this suite of tools with our generative structural design suite, we can compare different building typologies, column grid layouts and combinations of structural materials to understand the impact that one design option has versus another one and to ultimately optimize the structure to meet the clients carbon goals.

Design Explorer

Design Explorer is an interface that lets you visualize and filter groups of iterations – sets of design solutions that are both intimately related, and potentially scattered across a vast, high-dimensional possibility space. The tool allows teams to quickly sort through options to determine the most effective strategies for the desired project goals, such as a "net-zero for no additional first cost" or "maximize daylighting with minimal solar gains and eliminate cooling systems." Results are displayed in total energy use, heating and cooling system size, daylighting performance and first cost.



The Nature Conservancy, Brunswick, ME

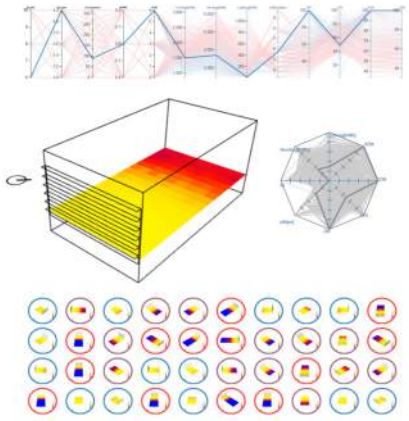
We Look for Ways to Incorporate Local Sustainable Materials

This project sets the bar for other office renovations and serves as a model of sustainable design in New England. The office includes a "Net Effect" carpet made from reclaimed fishing nets recaptured from the ocean floor. The new design maintains the exposed brick and post and beam structure of the historic mill building, while incorporating new, organic elements like a "wandering" wall made of locally harvested, sustainable wood and a leaf-like canopy of acoustic panels that echo natural systems.

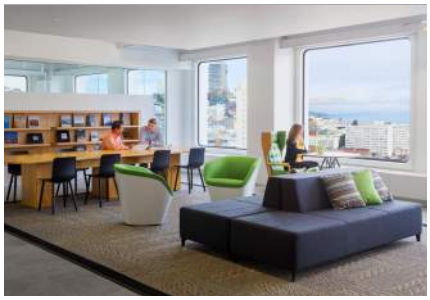
Sustainability Services

Sustainability Strategies

Thornton Tomasetti brings experience and analysis tools to provide innovative, climate-responsive solutions to achieve the project's sustainability goals. We use a combination of parametric tools to analyze and visualize site-specific climate data, and define relative comfort ranges to support passive and low-energy design strategies and synergies across programs. We facilitate discussions to assist in the evaluation and selection of high-performance and appropriately sized mechanical systems, which complement architectural solutions for comfort and performance. We define alternative / renewable energy opportunities, estimate energy production capacity and quantify return on investment. Additionally, we assess material approaches, water and waste efficiencies and operational goals.



The interface from one of Building Analytics' in-house parametric daylighting tools. The tool allows our analysts to simulate hundreds of design options allowing architects to choose from a menu of optimized solutions.



Benjamin Grimes

Thornton Tomasetti Office, San Francisco, CA
LEED Platinum v4 Commercial Interiors

Early Building Analytics and Sustainable Strategies

At Thornton Tomasetti we believe that there is a significant amount of analysis that should be performed at the earliest stages of design - and some analysis that should be performed even earlier.

Using our in-house parametric tools and engineering expertise we provide:

- Site Specific Climate Analysis
- Passive Strategies Analysis
- High-Performance MEP Guidance
- Alternative Energy Opportunities
- Material Approaches
- Water Balancing

Whole Building Energy Modeling

Thornton Tomasetti has extensive expertise in performing whole building energy modeling for a variety of new and existing building types for:

- Title-24
- LEED
- Passive House
- Net Zero Certification
- Incentive Programs

Our energy modeling team has experience in nearly every market sector, including but not limited to, commercial, residential, hospitality, cultural, higher education, K-12, government, healthcare laboratories.

Water Reuse Consulting

Thornton Tomasetti facilitates the process of determining the appropriate approach and space allocation for incorporating greywater, blackwater, rainwater and / or stormwater. Working with the design team and a water reuse vendor, Thornton Tomasetti facilitates design workshops, provides technical advice, and facilitates water reuse strategies across disciplines, including plumbing, civil and landscape.

Daylight Analysis

Thornton Tomasetti's Sustainability practice considers daylight analysis one of its specialties. Leveraging talent from a team of building scientists, façade engineers and architects, we provide holistic daylighting consulting using a combination of industry proven tools and in-house developed simulation programs.

Our R&D efforts have enabled us to develop workflows to parametrically simulate thousands of design iterations, enabling our clients to simultaneously balance natural and electric lighting, glare, heating, cooling and aesthetics. The result is industry leading consulting that helps teams create optimized daylight solutions.

LEED Consulting

Thornton Tomasetti staff has more than 20 years of experience consulting on LEED projects including the LEED v4 rating systems. Our San Francisco office is the first LEED v4 commercial interiors project to achieve platinum in the United States. Thornton Tomasetti also consults on other high-profile LEED Platinum projects. As part of the integrative design and construction process, Thornton Tomasetti provides project management oversight for LEED items, including regular updates and action items, drawing and specification reviews, LEED documentation and participation in meetings and charrettes.

Passive House Consulting

As a Passive House Consultant, our sustainability team ensures that the project meets the stringent energy performance criteria requried to achieve certification, which includes specific guidelines for the building envelope such as peak heat load, primary energy demand and airtightness. **The Village Centre in Brewer, Maine** participate in the pilot program **to help define climate-specific passive house standards for the Passive House Institute US (PHIUS)** and is one of the largest passive-house-certified developments in the country.

Sustainability Services (Continued)

Tim Greenway

Coastal Maine Botanical Gardens, Bosarge Family Education Center , Boothbay, ME
LEED Platinum, Net Zero

Thornton Tomasetti

Colby College, Davis Science Center, Waterville, ME. *LEED consulting and energy modeling services for a 36,400-square-foot academic science building. The energy-efficient facility features a geothermal well for heating and cooling systems, and an automated lighting system. It achieved* LEED Gold certification.

Building Enclosure Commissioning

Thornton Tomasetti provides comprehensive Building Enclosure Commissioning (BECx) from early design phases through construction and the warranty period. Our experts in façade engineering, building analytics, inspection and testing, and the commissioning process provide owners, architects and contractors assurance that the building envelope will perform as intended. We provide peer review of enclosure design, performance analysis of design options, recommendations for performance testing, and on-site observance of construction and testing of envelope components.

Embodied Carbon Optimization

Thornton Tomasetti quantifies the embodied energy and embodied carbon impacts of the structural systems designed by Thornton Tomasetti at each milestone of the project (typically Conceptual / Schematic Design, Design Development and Construction Documents). Our quantification is based on the estimated total quantities of structural materials at each stage and generally accepted coefficients for embodied energy and embodied carbon per material weight unit.

Energy Programming

Energy programming incorporates energy and daylight considerations into the earliest stages of architectural programming. We work with the design team to leverage program elements to facilitate passive strategies like natural ventilation and daylighting. In complex programs like laboratories and mixed-use developments energy programming can be used to support HVAC strategies like load-sharing and cascading air.

In practice, teams have found that a systematic analysis of relevant interdependencies can influence design decisions early on, achieving multiple benefits and produce cost-effective and efficient design solutions. The process makes sustainability inherent in a building's program.

Concept Design Strategies

We apply a creative, innovative approach combined with time-tested MEP experience to help clients select optimal mechanical systems, enhancing architectural solutions for comfort and performance with MEP solutions that are both efficient and highly effective at delivering comfort, reliability and optimized design.

Net Zero Services

We align early with building owners and design teams to establish the path forward for projects targeting Net Zero Energy and Net Zero Water. We drive loads down, and performance up, and model the building and its systems to help direct cost-effective approaches to achieve net zero.

Health-Based Materials Specification

We assist project teams in identifying and avoiding sources of indoor contaminants, pollutants and hazardous chemicals in building products, materials and finishes. Through healthy materials research and specification review, and by employing our knowledge of the Red List and criteria for Environmental Product Declaration, we provide a healthy indoor environment for projects of all types and sizes.

Education and Training

Thornton Tomasetti provides preapproved and tailored education and training courses to the design and building industry. Our firm's goal is to help cultivate innovation and embrace integrative design and net zero thinking. From public workshops to higher education courses, our sustainability experts support comprehensive green building by teaching courses ranging from integrated design to a wide range of approaches in high-performance green buildings.

/mainecohousing.org

Go Logic House, Belfast, ME
LEED for Homes Platinum
The first building in Maine to receive passive house certification

Edenworks Urban Farm Prototype

Brooklyn, New York

Courtesy Edenworks

Client / Owner
Edenworks

Client/ Architect
Edenworks

Completion Date
2015

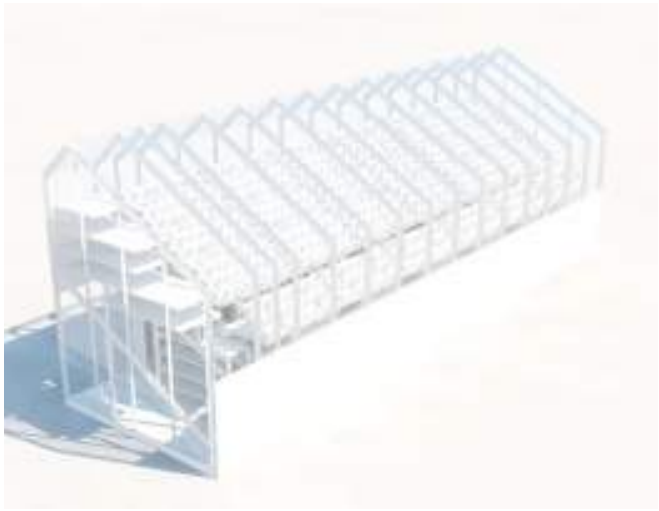
Construction Cost
Undisclosed

Total Area
9,700 sf

Services
Energy Engineering
HVAC Design

Edenworks' vision was to create a high performance closed loop system to grow food on existing building rooftops in New York City. Thornton Tomasetti's interdisciplinary expertise in energy and sustainable engineering enabled us to serve in a unique capacity by creating innovative HVAC solutions to maintain specific environmental conditions in a prototypical aquaponics laboratory.

Inside the laboratory, air and water are recycled in a closed loop through various systems to support the growth of mushrooms, tilapia and vegetables. Thornton Tomasetti analyzed the heat balance loads for each hour of the year to understand load sharing opportunities. Creative solutions were evaluated and proposed, including but not limited to automated shading materials, evaporative cooling and low temperature heating systems to provide a conducive environment. The collaboration led to a successful aquaponics laboratory that is high performing and environmentally effective.



Thornton Tomasetti
BECKER STRUCTURAL ENGINEERS

International Beverage Producer

Atlanta, GA

2011 LEED Gold Certified Facility

Beverage Plant Expansion and Renovation:

Provided structural design and construction administration services for a beverage plant expansion in Atlanta, Georgia. This project included multiple phases totaling over 180,000 SF of new space and 40,000 SF of renovations. The plant design included a framed second floor with spans up to 55 feet designed to support fork lift and heavy industrial loadings. The design also included a foundation for a 120 foot tall high density automated storage racking system. A 25 ton bridge crane with a 10 ton auxiliary trolley runs the length of the facility. A new twenty-two foot basement was constructed within the existing building requiring complex shoring of existing building columns and footings.

Cogeneration Facility:

Foundation design, pipe and equipment support for a natural gas and methane fired cogeneration facility in Atlanta, Georgia. The design included turbine isolation slabs, building foundations steel pipe and equipment supports and foundations for this plant designed to produce both electricity and steam for use in the utility plant of the main facility.

Paul B. Becker, P.E., SECB

Senior Principal

Project Role

Structural Project Manager

Summary

As founder of Becker Structural Engineers, which was acquired by Thornton Tomasetti April 2019, Paul brings nearly forty years of structural engineering expertise in complex building systems using steel, concrete, masonry and timber framing as well as deep foundation support systems and earth retaining structures. He has extensive experience in expansions, concrete restoration, failure investigations, structural evaluations, value engineering and construction monitoring. Paul brings specialized knowledge of historic restoration and stabilization, adaptive reuse and the upgrade of existing structures for current seismic code requirements. He has worked on projects ranging from parking structures to commercial and industrial facilities to municipal and educational buildings.

Education

- M.S., Structural Engineering,1989, University of New Hampshire,
- B.S., Civil Engineering, 1980, Pennsylvania State University

Registrations

- Registered Professional Engineer in Maine (6554), Massachusetts (39009), New Hampshire (6258), New York (86255) Vermont (7773), Georgia (033280), Connecticut (20725), Rhode Island (9067), Ohio (74529)
- Certified, Structural Engineering Certification Board (SECB)

Professional Activities

- Member, Legislative Committee, American Council of Engineering Companies (ACEC)
- Member, American Concrete Institute (ACI)
- Member, American Institute of Steel Construction (AISC)
- Member, American Society of Civil Engineers (ASCE)
- Board Member, Maine Preservation
- Member, Structural Engineering Association of Maine (SEAM)
- Member, Portland Society for Architecture

Select Project Experience

University of Maine, Advances Structures and Composite Center Addition, Orono, ME. Preliminary structural engineering services for a Cross-laminated timber [CLT] Additive Manufacturing Laboratory addition to the UMaine Advances Structures and Composite Center to house the world's largest wood and plastic 3D printer.

Confidential Client, Beverage Plant Cogeneration Facility, Atlanta, GA. Structural engineering services for a natural gas and methane fired cogeneration facility. The design included turbine isolation slabs, building foundations, steel pipe and equipment supports. The foundations were designed to produce both electricity and steam for use in the utility plant of the main facility.

Confidential Client, Beverage Plant Expansion and Renovation, Atlanta, GA. Structural design and construction administration services for a beverage plant multi-phased 180,000 square foot expansion and a 40,000 square foot renovation. The plant design included a framed second floor with spans up to 55 feet designed to support fork lift and heavy industrial loadings. The design also included a twenty-two foot constructed within the existing building, which required complex shoring of the existing building's columns and footings**.**

Jackson Laboratories, Importation/Isolation Facility, Bar Harbor, ME. Structural engineering services for one of the world's leading genomic testing and mammalian research facility. This award winning 22,000-square foot building is a three-story above-grade structure with a one-story below-grade basement. The basement provides space for the mechanical and electrical services as well as the Cryogen Repository. The building's design incorporates flexibility for a future 10,000-square-foot addition.

University of New England, Biomedical Research Facility, Portland, ME. Structural engineering services for a 35,000 square-foot expansion of biomedical research space comprising laboratories, support space and offices. The first floor features a lobby, a vivarium and dedicated mechanical space. The structural system is a braced steel frame design using hot rolled beams and girders with composite steel floor deck and composite cast-in-place concrete slabs. The design included accommodation for future horizontal expansion.

University of Maine, Engineering Education and Design Center, Orono, ME. Structural design services, LEED consulting services and sustainability consulting services for a 120,000-square-foot multi-use academic and laboratory building comprising offices, laboratories, technical spaces and classrooms. The building is pursuing LEED Silver and a target of carbon neutral by 2040.

Brunswick Naval Air Station, Brunswick, ME. Structural design of an innovative "exoskeleton" to salvage a vintage World War II hangar. The deteriorated existing 120-foot clear span wood trusses were in danger of collapse under minimal snow loading. The solution required new steel trusses which span the hangar and support the existing trusses from above, eliminating any reduction in aircraft clearance.

Thornton Tomasetti
BECKER STRUCTURAL ENGINEERS

Vamshi Gooje, LEED AP BD+C, BEMP, CEM

Vice President

Role

Sustainability Project Manager

Summary

Vamshi Gooje joined Thornton Tomasetti in 2004 and heads the Building Analytics group for the Sustainability practice. He is responsible for the strategic growth and development of initiatives for the Building Analytics team. He advises clients on green building strategies and technologies. He has extensive experience providing energy analysis and sustainability consulting for a variety of projects, ranging from renovations and expansions to new construction, for commercial, residential and educational buildings and research facilities. Vamshi is an expert in building science related to whole building energy, daylighting and thermal comfort. He is proficient in a range of energy simulation engines, including EnergyPlus, DOE 2.2 and Radiance.

Education

- Master of Science in Building Design, 2004, Arizona State University
- Bachelor of Architecture, 2000, Jawaharlal Nehru Technological University, India

Registrations

- LEED Accredited Professional, Building Design + Construction, U.S. Green Building Council
- Building Energy Modeling Professional (BEMP), ASHRAE
- Certified Energy Manager (CEM), The Association of Energy Engineers

Professional Activities

- NYSERDA Energy Code Delphi Expert
- Member, Advisory Board, Architalx

Presentations / Publications

- "A Prototype Visualization Tool For Hygrothermal Analysis," NESEA, Boston, MA, 2016, Author
- "A Data Visualization Tool For Hygrothermal Analysis," IBPSA / ASHRAE, 2014, Atlanta, GA, Author / Presenter
- "Impact of Radiant Asymmetry on Thermal Comfort," 29th International PLEA Conference, September 2013, Munich, DEU, Presenter
- "Applying Tools For Cross-Practice Collaboration," DIVA Day Conference, July 2013, Presenter
- "Evaluation the Capability of Simulation Tools to Predict Temperature Gradient in a High Mass Residence," Arizona State University, 2004, Tempe, AZ, Author
- "Visualization Comfort and Envelope Conditions with Animation," 28th National Passive Solar Conference, ASES, 2003, Austin, TX, Co-author
- "Courtyard Performance - Geometry of Solar Influence," 28th National Passive House Solar Conference, ASES, 2003, Austin, TX, Author

Select Project Experience

Edenworks Urban Farm Prototype, Brooklyn, NY. Energy engineering and HVAC design services for aquaponics laboratories located on several existing buildings' rooftops throughout NYC. Scope involved design assistance analysis, heat balance calculations and HVAC design. The sustainability team evaluated several innovative HVAC solutions to successfully create a high performance aquaponics lab that is environmentally effective. The high performance closed-loop system throughout the lab enables an efficient growing environment of food.

Lee Company Manufacturing Facility Building 82, Westbrook, CT. Sustainability consulting services for an 80,000-square-foot single-story manufacturing facility with 50 percent energy savings. The project team conducted a two-day charrette that lead to a saw tooth roof design that allowed natural daylight to illuminate the manufacturing floor. Services also included energy and daylighting analysis testing for roof configurations and HVAC system designs.

Federal Building #2, 850 Third Avenue, Brooklyn, NY. Energy modeling services under NYSERDA's New Construction Program for the conversion of a one-million-gross-square-foot warehouse in Sunset Park's Liberty View Industrial Plaza into an industrial center. Scope included calculation of energy savings that would result from energy conservation measures.

PowerPay Corporate Headquarters, Portland, ME. LEED consulting and energy modeling services for the adaptive re-use of a 46,450-square-foot public market into an office building. The LEED-Gold-certified building incorporates sustainable features such as a highly-efficient HVAC system, renewable energy offsets, LED lighting and water conservation measures. Cost-effective fixtures and occupancy sensors reduced the use of artificial lighting power by 25 percent.

Colby College, Athletic Center, Waterville, ME. Sustainability consulting services for a new athletic center which will integrate five indoor performance venues into one 340,000-square-foot venue. Key spaces include an aquatic center, field house, ice rink, a gymnasium and squash courts. The project will meet LEED Silver certification using LEED v4 at minimum; LEED Platinum is the target.