COMPANY EXPERTISE

CIVIL ENGINEERING

Land development and the creation of new subdivisions can impact surrounding communities in a variety of ways, thus requiring an analysis of the demands and effects presented by a broad spectrum of issues. This practice requires an understanding of existing and conditions in tandem with their integration into established environments. NE&C provides a comprehensive approach to site development design and planning.

Site Planning - Runoff Calculations - Drainage System Design - Water Demand and Supply Design - Waste Water Engineering - Wetland Delineation and Permitting - Road and Site Drive Design - Watershed Analysis - Utility Planning Zoning Compliance & Review Planning Regulation Adherence - Traffic Engineering - Parking Design Soil Erosion and Sediment Control Planning - Water Quality Requirements - ADA Compliance

TRANSPORTATION ENGINEERING

An important aspect of any site development project is a complete analysis of all traffic operations in the affected area. Innovative solutions to traffic engineering and transportation planning can provide significant benefits, which aid in the mitigation of adverse impacts for future or existing conditions. Careful quantification of existing traffic conditions and extrapolation of proposed changes in traffic flow, allow NE&C to determine the best methods for optimizing traffic flow and safety. Computer modeling of traffic volumes aids in the determination of queuing, delays, levels of service and distribution for the greatest probable accuracy in representing impacts.

Traffic Safety Studies - Accident Analysis - Transportation and Parking Studies - Highway Design Parking Layout - Traffic Impact Studies - Intersection Analysis

STRUCTURAL ENGINEERING

The practice of structural engineering is highly analytical and mathematical. The design of load bearing construction requires the analysis of proposed loads for practical and extreme conditions, combined with an understanding of the mechanics of various construction materials. Structural engineering is required for the design, construction, renovation or restoration of new and existing structures. NE&C commonly partners and collaborates with a broad cross-section of the Architectural and Construction business community.

Structural Steel Design - Reinforced Concrete - Timber Engineering Foundation Design Composite Materials - Specialty Engineering (i.e. Structural Glass, Curved Steel) - Change of Use Load Analysis Structural Upgrade and Retrofit - Vibration Isolation - Seismic Design and Upgrade - Structural Failure Assessment - Weld Inspection - Concrete Slab Design Wind Load Analysis - Commercial Slab (High Load Bearing) Design - Pile Bearing Design STADD III Program

WATERFRONT ENGINEERING

Waterfront engineering combines disciplines such as structural, hydrological and environmental engineering. Waterfront and marine structures are exposed to unique forces generated by extreme weather events, impact and pulls from vessels, tidal water flow and corrosive environmental elements. An essential aspect of any responsible waterfront design and operation is the strict adherence to environmental protection criteria and regulations. NE&C's waterfront engineering and design activities are carefully coordinated with environmental site assessments and associated impact statements.

Pier Design - Docking Facilities - Marina Design - Dredging Permitting - Flood Plain and Velocity Zone Determination - Wave Force Analysis - Coastal Foundation Design - Army Corp of Engineers Permitting - Anchorage and Mooring Field Layout - Boat Launch Ramp Design - Sea Wall Design - Jetty Design - Bottom Profiles - Underwater Utility Location and Design Scour Analysis and Toe Erosion Prevention - Storm Water Detention and Discharge Permitting

LAND SURVEYING

The quality of engineering and design work is heavily dependent on accurate field surveying. Thus, NE&C maintains a fully equipped land survey department with the latest in surveying technology. The range of surveying services includes:

ALTA Standard Surveys - Property Line Survey - Construction Layout - FEMA Flood Elevation Certification - Topographic Survey - Road Layout Photogrammetric Setup - Land Subdivision - Hydrographic Surveys

MATERIALS TESTING

NE&C maintains a full service materials testing laboratory, which is accredited by AASHTO to provide testing for both soils and aggregates. The firm's staff has been trained in the lab environment so that our employees understand the characteristics and properties of materials used in engineering, design and construction. The development of first time specifications for new products being introduced into the construction market, and the analysis of existing materials for new uses are just two areas of the lab's involvement. NE&C has testing capabilities that meet ASTM standards and can create tests focused on characteristics or standards not yet published. Additionally, some testing can be performed at the site or premises, rather than in the lab. NE&C provides Testing and Inspection for:

Soils - Clay - Rock - Concrete - Steel - Timber - Asphalt
Composite Materials - Fireproofing - Pile Driving - Welding Seams

CONSULTING - MUNICIPAL LAND USE AND SITE PLANNING

In today's atmosphere of municipal budget constraints and staff limitations, officials responsible for development activities in local communities need a cost effective alternative to typical strategies for: local government planning; land use planning; zoning; capital infrastructure programming; and project management. It is imperative that local officials are armed with up-to-date information, creative methods and process oriented techniques in order to address a community's most critical decisions. NE&C's staff includes former management- level municipal employees who are able to provide recommended solutions and project outsourcing, all designed to fit a community's unique structure.

Comprehensive Planning - Zoning Ordinance Amendments - Overlay Zoning - Capital Infrastructure Planning/Evaluation Program - Project Plan Review - Site Planning - State and Federal Permitting Strategic Planning - Budgetary Analysis - Departmental and Community Management Plans

ENGINEERING and PROJECT MANAGEMENT

Highly complex projects frequently require engineering participation during the construction phase. In meeting time and budget constraints, critical elements include the ability to accurately assess and measure the internal and external resources required, then expended, for successful completion of the project. NE&C utilizes cross-functional engineering and project management teams to identify and check the necessary metrics. At NE&C, it is strongly held that if the variables of a project cannot be identified and measured, then the project cannot be controlled in the most advantageous manner. NE&C provides the following Planning, Scheduling, and Construction Management services:

Project Element Planning - Construction Specifications - Project Scheduling - Critical Path Method - Bid Specifications - Cost Estimating - Contractor Selection and Certification - Site Supervision - Materials Testing - Quality Control - Construction Inspection - Construction Certification - Cost Tracking - Construction Management - Permit Compliance - Site Layout Health and Safety Planning