

# SEALANDER ARCHITECTS

## THE DESIGN AND CONSTRUCTION INDUSTRY IN EASTERN MAINE

### AN OVERVIEW



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*For those who live in Maine and for those who do not, the nature of construction projects in the Pine Tree State may seem like a black box. This paper was written to provide some guidance on having a successful construction project, whether it is commercial or residential. Consider this a broad survey of the design and construction industry in Eastern Maine. Construction projects throughout the country can be complicated, stressful undertakings. It is of course prudent to seek professional guidance.*

## THE LEGAL ENVIRONMENT

Although many Mainers feel differently, Maine is not a heavily regulated state, when compared to others. Regulation of the construction industry occurs at the State and local level, but differs by locale and project type.

The State Fire Marshal regulates the construction of public buildings through the application of the National Fire Protection Association's NFPA 101 Life Safety Code and the Americans with Disabilities Act. "Public buildings" are defined as educational, health care, places of assembly, hotels and lodging, and businesses of one story and 3,000 square feet or more. For the small commercial building project under 3,000 square feet, SFM review is not required. SFM review is not required for single family dwellings.

Maine adopted the Maine Uniform Building and Energy Code (MUBEC) several years ago, by law the only building code that can be enforced by a municipality. MUBEC is a family of codes published by the International Codes Council and the American Society of Heating Refrigeration and Air conditioning Engineers.

Maine requires enforcement of MUBEC only in municipalities of over 4,000 people. This requirement means most of the state's geography is not covered by MUBEC. Very few locales on the coast of Maine outside Portland are covered, and vast portions of inland Maine are not covered.

Commercial construction in larger cities and towns (over 4,000) may be regulated by both the NFPA 101 at the State level, and MUBEC at the municipal level. The two codes are fairly consistent with one another, so conflicts seldom arise. Construction in these populated areas have two authorities having

jurisdiction.

For rural (municipalities with less than 4,000 population) areas, there is virtually no regulation for the majority of construction. Single family homes, industrial buildings, and smaller commercial buildings are not regulated.

Residential construction and renovation must meet the energy efficiency requirements of MUBEC, but this law is not enforced in municipalities that do not enforce the MUBEC. The result of this is a state full of buildings that fall short of generally accepted energy efficiency performance standards. For a cold climate, Maine has a lot of energy inefficient buildings.

Maine's environmental regulations are more fully developed and enforced, and are more consistently applied throughout the State. Site development of greenfields- undeveloped land- is well-regulated. Much of Maine is near a body of water, or is some type of wetland. Both conditions bring environmental regulations to bear. While Maine is a large state with a lot of undeveloped land, quite a lot of this land cannot be developed due to environmental protections in place.

Projects close to bodies of water are regulated by Maine's shoreland zoning ordinance. The ordinance applies to land next to fresh and salt water bodies. This ordinance is adopted and enforced by municipalities, but is written by the State, thus providing uniformity of regulation. Shoreland zoning generally prohibits development within 75 feet of water bodies, and regulates development within 250 feet of water bodies.

Some areas of the Maine coast are designated bird nesting habitats, and development is controlled in these areas.

## SITE DEVELOPMENT

Projects outside of large towns and cities are often built on previously undeveloped land. These greenfield projects are regulated to control their environmental impact. Stormwater management for control of run-off, and sensitive area protection are the two major goals of site development regulation. In general, a greenfield project requires consulting with some type of site design professional: a surveyor or soil scientist for wetlands delineation; a civil engineer for stormwater; or a site evaluator for a wastewater disposal system design.

Maine's other uniformly enforced ordinance is

**SEALANDER ARCHITECTS**

Commercial Site Plan Review. As the name indicates, it applies to commercial development. Municipalities differ in the level of sophistication they bring to enforcement, but the criteria are the same throughout the State. The intent of Commercial Site Plan Review is to keep neighbors from becoming a nuisance to one another through commercial development.

Large portions of Maine are not zoned, meaning any type of development allowed by the Shoreland Zoning ordinance is allowed anywhere in the State. Lobstermen working out of their house and boatbuilders sit cheek to jowl to second homes. Property line setbacks are often missing. There are private covenants in place, mainly on subdivided properties. These subdivisions do limit development, and are enforced through the courts, not the government.

Maine has laws regulating the subdivision of property, and of buildings.

## WATER AND SEWER

Rural areas of Maine do not have water or sewer infrastructure. In these areas, a well and a wastewater disposal system (a tank and a leach field) are part of development. Wastewater disposal system design is a regulated profession. Licensed evaluators do this work.

Water quality in Maine varies widely. Some areas of Maine have great water, which is why Poland Spring is in Maine. Other areas have heavy metals in the water. Land purchases in Maine normally come with a site evaluation that indicates whether a suitable location exists for installing a wastewater disposal system. Most land transactions come with a stipulation requiring assurance that the buyer can build their wastewater disposal system. The same cannot be said for water quality assurances. Investigating the water quality of neighboring wells can provide some assurance. If poor water is found, a water purification system can usually correct the issue. For this reason, water purification vendors are common in Maine.

## DATA, TELEPHONE AND ELECTRICITY

Many parts of rural Maine are still on dial-up for internet service. Other areas depend on some form of radio or satellite internet. The high-speed internet is nowhere near as high-speed as in

Boston or New York. Most of the high-speed internet is Digital Subscriber Line, or DSL. DSL is limited to about 1 mile from its source, one of the small Fairpoint Communications huts that can be found here and there. High-speed roll-out is continuing, but slow. Thus, it makes sense to check on internet availability when choosing a location for either a home or a business.

Large swaths of Maine do not have good cell phone service. Eastern Maine in particular can feel like a blanket of dead zones.

Bringing power to a greenfield site can be expensive. Clearing a path several hundred feet long to run a power line can cost several thousand dollars. Running power and telephone underground may be twice as expensive as running poles.

Power outages frequently occur throughout eastern Maine, although cities are better shielded than rural areas. Most of the outages are weather related; a storm will topple trees. The local utility is well-prepared to deal with outages. Power may go out two or three times a year, but typically for less than a day at a time. Stories abound about the ice storm of 1998, when the power was out for weeks.

Power outage risks lead many owners to install generators. A healthy portion of the population has a gasoline or diesel generator in the garage, hooked up to a transfer switch. A much smaller number have solar panels, and these are usually grid-tied, which means they do not work as a source of back-up electricity.

## THE PROFESSIONAL ENVIRONMENT

Maine has fairly relaxed laws regarding requirements to hire licensed architects. As with the rest of the country, Maine regulates the practice of architecture. Only a licensed architect can call themselves architects, or suggest they are architects. This law is loosely applied. It is common to see builders advertise in Chamber of Commerce publications under the title "Architects", for instance. Maine does require architects to use the phrase "Maine Licensed Architect" in advertising and marketing materials.

Engineers in Maine often, and legally, provide services that are architectural in nature. For instance, many civil engineers design whole buildings. This ability for engineers to provide architectural services, and for architects to provide

**SEALANDER ARCHITECTS**

engineering services, is by statute limited to services “incidental” to the primary service. For instance, an architect could provide structural design when the structural design is “incidental” to the architectural design. Many practitioners take the statute to mean one should practice within their comfort zone. In other words, professionals have an obligation to provide services only in their areas of competence. So, a civil engineer who feels professionally competent to do so could design an entire building. An architect could design a stormwater mitigation system.

In reality, the text of the law says that if most of a project is structural design and a small, “incidental” portion is architectural, then there is no reason a structural engineer needs to hire an architect for the incidental non-structural design.

Maine law requires a licensed professional to stamp drawings that are required for permitting. Since permits are only required for public buildings submitted to the State Fire Marshal, all other building projects can be built without a licensed design professional.

General contractors are not licensed in Maine. Anyone with a pick-up truck and a hammer can call themselves a general contractor. Maine law limits itself to requiring projects greater than \$3,000 in value to use a contract, and for the contract to contain language promising good workmanship. Deposits are limited to one third the value of the contract.

Maine’s construction industry is built on trusted relationships, so even an unknown contractor is probably going to be honest. This does not mean bad things do not happen. They do. Having a good design professional on the owner’s side can help avoid problems.

## THE ECONOMIC ENVIRONMENT

What does construction cost in Maine?

Project costs can be divided into two categories: soft costs and hard costs. Soft costs are the costs of services associated with the project. These include permit fees, design fees, legal fees, and other fees that do not end up getting incorporated into the final project. There may be marketing or advertising costs, for instance. The cost of a survey and soil test are soft costs. These costs are typically paid directly by the owner.

The cost of land may be lumped with soft or hard

costs. In general, “Hard Cost” is usually synonymous with construction cost, the amount of money paid to the contractor. Strictly speaking, hard cost is not the same as the cost of items incorporated into the project. Contractors provide services, too. These services range from attending meetings to taking construction photos for the benefit of the owner. Contractor services are generally grouped together as “General Conditions” of the contract: they are work the contractor is obligated to do, that does not get materially incorporated into the construction project.

Undeveloped land in eastern Maine can run from a few thousand dollars per acre to over \$100,000 per acre for deep-water shorefront. Shorefront land prices are more closely proportional to the linear feet of shorefront than to the acreage of the parcel. Many desirable parcels have buildings already on them, and this development often skews the typical asking price for the parcel. It is not uncommon to see a beautiful piece of property with an exorbitant price tag because there is a tear-down dwelling on it. The added cost to the asking price of land is often well beyond the reconstruction value of the building that sits on it.

Construction costs in eastern Maine can run the gamut, just like everywhere else. Residential construction of code-compliant quality cannot really be done for less than \$100 per square foot. High-end residences can break the \$500 per square foot barrier. In general, for good quality construction, \$200 to \$300 per square foot can be expected.

Construction costs can also vary by specific location. Costs on Mount Desert Island are acknowledged higher than in Trenton, right on the other side of the bridge.

A two-bedroom house may be 2,000 square feet in area; at \$250 per square foot, the construction cost of that house is \$500,000. An extensive renovation of a 2,000-square foot house may cost \$125 per square foot, or about half the cost of new construction.

Residential contractors in Maine prefer to work hourly, instead of using a lump, or stipulated, sum. This is part of the honest, trusting environment that pervades not only the construction industry but other facets of Maine culture. The downside is that owners face uncertainty when starting a project. It is not uncommon for a project to exceed an owners’ budget because the scope of work and

**SEALANDER ARCHITECTS**

its price was never set. Most design professionals will advise an owner to have a clear scope defined through drawings and specifications, and seek multiple competitive bids when choosing a contractor.

The commercial construction industry is much more sophisticated, both on the design side and the construction side. Expectations for quality of work, how to handle changes, and payment methods are well understood and transparent. For this reason, commercial contractors and design professionals who also do residential work are often a good choice for residential owners.

For commercial construction, square foot costs can vary just as much as residential. A frequently-used construction system is the Pre-engineered Metal Building, or PEMB. These buildings are composed of rigid steel frames manufactured in a plant, a concrete slab foundation, and usually a metal skin for cladding. The PEMB manufacturer often supplies the wall and roof panels as well as the frame. A PEMB building can be very cost effective for structures over 3,000 square feet that require a lot of head room. Construction costs can be around \$75 per square foot, or even lower for larger buildings.

PEMBs have historically been very energy inefficient. This is changing. New thermal break technologies are increasing the energy efficiency of PEMBs to the point where some cold climate PEMBs are actually net-zero energy buildings. This technology is in its infancy, so the input of a design professional versed in energy efficient PEMBs is helpful.

A small office building constructed with a wood frame may run \$150 to \$200 per square foot, including site costs.

## DESIGN FEES

Design fees in Maine are similar to design fees in the rest of the country. Just as construction costs are somewhat lower in Maine than in urban areas of the United States, so are architect billing rates. An architect in a New York suburb may be \$150 per hour, while an architect in Maine may be \$110 per hour.

For a residential project designed by a licensed architect, expect design fees to be around 10% of construction cost, but as high as 20% of construction cost. Some factors that lead to

high design fees include using a (1) name-brand architect, (2) designs that require specialized structural and mechanical systems, (3) intensive reliance on the designer during construction, and (4) high levels of design specificity.

## THE LABOR AND MATERIALS ENVIRONMENT

Building in rural Maine is an opportunity to get off the beaten path. Getting labor and materials to that bucolic setting is a challenge. Eastern Maine relies on the materials and labor markets of southern and central Maine for a variety of products and trades. Everyone has heard of local projects where a trade may have come up from New York. For some products, availability may be limited to one or two manufacturers. Roofing is an example of this. Materials are available, but the selection is more or less limited to a handful of manufacturers. Local designers are generally aware of these market limitations.

Some materials and skills are native to eastern Maine, and to some extent unique to the area. The presence of the boat-building industry means there are quite a few people who know how to work with curved wood. Local granites are easy to procure, and reasonably priced.

## CONCLUSION

Building in Maine can be stressful, just like everywhere else in the country. In general, the design and construction industries are populated by honest people. Regulatory enforcement is fairly relaxed. Costs per square foot of construction are generally lower than in regional urban areas. Procuring specialty materials and trades can be difficult. Infrastructure can be thin.

Sealander Architects hopes this article has proved helpful.

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