

BUILDING STYLE & LOT GRADING CONSIDERATIONS

By

*Thomas F. Giovannetti, P. Eng., NSLS
CIVTECH ENGINEERING & SURVEYING LIMITED*

The target audience of my previous article “The Value of Professional Engineering Advice” was the rural homebuilder. In this article I spoke of the necessity for the homebuilder to determine if the house design could meet or match the particulars of the lot chosen for construction. It was stressed that the individual needs of the homeowner be known, at the onset, in order to determine the anticipated concepts of the building location, building style, foundation type, basement window preferences and any requirements for level grade walk-out to the backyard. etc.

The intention of this article is to explore the general procedures required to achieve a building that matches the lot topography. This procedure would apply to all lots in any Municipality with or without central services. The fundamental concept of choosing a home design and siting is generally the same in a rural and urban area. In rural areas particular attention must be paid to the location of the septic system etc., whereas in an urban area depths of sewers and subdivision drainage patterns are the items of concern. The aspects of the rural/urban similarities/differences are not intended to be covered in depth in this article. The land and building style aspects are of concern. It is assumed that the property is not a problem land for either building and/or septic. This in itself is outside the scope of this article and not intended to be examined.

The “lot” consists of typical physical attributes such as: size; shape; access; location; elevation; slope; soil type; depth of soil and water table etc. The lot in an urban area can be approximately 460 sq.m (5000 sq.ft) whereas a lot in a rural area is usually greater than 2700 sq.m (29,000 sq. ft). The lot can be: level; sloping to front; sloping to rear; sloping to sides and undulating. The slope could be: gradual; compound; moderate; extreme and/or any of the above.

The desired home could typically be a: back-split; side-split; front-split; main floor entrance; walk out basement; raised bungalow; detached; semi detached etc. and could be a bungalow or a two story with or without a basement. Therefore, at the beginning many potential homeowners could become confused in trying to relate the attributes of the lot to a preferred building style.

Prior to selecting a lot it is important to identify the contemplated building style. It should be understood, at the beginning, that the building style and lot characteristics are two very separate items and must be reviewed simultaneously. The majority of the time it is the floor plan layout and general appearance of the dwelling that appeals to the potential homeowners. It is therefore important to find the right lot that suits the building style. If the lot has been previously purchased, it is equally important to select the proper building

style for the lot topography etc.

Many realtors/home builders can be of general assistance in the selection of the lot for your planned home. Once you have decided the district you wish to build in the building style will be dictated by the attributes of the lots. The task at hand will be to choose the right lot to suit your building type.

Generally, at the subdivision approval stage the Municipality may have on file the preferred building location, service depths and lot grading requirements. In rural areas a master plan may show building, driveway, and well/septic locations along with general lot grading and drainage patterns etc. This information is very valuable and should be obtained prior to making an offer on the lot. This information should be available from the seller, municipality and/or Realtor. It is at this time you may want to seek additional help from your builder, home designer and/or engineer/surveyor to provide you with the initial screening of the lot to determine if it meets the requirements of the home preferences. If the lot has central services and is not in a recently approved subdivision an engineer most likely will be required to provide the lot grading plans for the building permit

Following the initial screening it is important to have your purchase and sales agreement properly prepared to cover all aspects of the conveyance such as in title and other objections for the purchase of the lot. The objections can range from environmental concerns to satisfactory on-site sewage approvals and obtaining a building permit. In other words, other than obvious title issues, you do not want to buy an unknown contaminated site and/or install a costly C3 septic field due to unanticipated unknown soil conditions. This requirement is in keeping with my article "Buyer Beware" in Volume 8, No 5 of this publication. Your lawyer would be of assistance in the preparation of the Purchase and Sales Agreement.

When you have found a lot that meets your building preferences, and if the requirements of the purchase and sales agreement are satisfied, you should apply for a building permit. Prior to doing this the siting, elevations and drainage patterns etc. must be known and/or followed depending on lot grading by-laws and/or on-site sewage regulations. This information would be known if you have requested copies of the approved subdivision plans from the Municipality and/or seller.

Previously, I had discussed that the lot could take on many shapes and slopes and therefore prior to having your building plans finalised by the home designer the lot should be surveyed to determine the exact slopes and elevations of the lot. This can be accomplished by contacting a Nova Scotia Land Surveyor of whom for the most part will also be required to provide a Surveyor's Location Certificate for building permit and/or mortgage purposes following the construction of the foundation.

It would be in your best interest to obtain an estimate of fee for the topographic elevation survey plan, staking of the foundation and location certification of the dwelling. In the HRM many areas are governed by the Lot Grading By-Law. Copies of the By-Law can be obtained at the Municipality. It would be prudent to obtain a copy and review the process in order to avoid any confusion.

The fees for the surveying work will depend on if you just require the basis minimum

surveying service and/or if you require more detail and thus a higher level of service. This generally comes about following the preparation of the topographic contour plan. You may wish your surveyor/engineer to network with your home designer to fine tune the siting of the dwelling, foundation style, wall drops, window locations etc.

The important information under review will be the , proposed lot grading requirements, existing elevations and/or the proposed on-site sewage considerations. Failure to have a detailed elevation topographic plan prepared will limit the home designer, Surveyor and/or engineer in the preparation of the anticipated building style, location and landscaping. Considerations.

Municipalities have different building permit requirements and should you elect to only follow the minimum standards the outcome of the dwelling siting and elevation may be at the discretion of the individual performing the initial foundation excavation. . If you have not provided foundation wall details and site grading elevations to the excavation contractor the final excavation may not suit your plans. If this happens the foundation contractor will have no other choice but to make changes to suit what was excavated. This may not suit what you may have expected and could result in changes in locations of entrances and basement windows etc.

Therefore, it is recommended that the lot elevations be known, the siting of the building be pre determined in conjunction with preparation of the building plans. The foundation layout should be conducted by a surveyor providing suitable offsets and benchmarks to assist in the initial excavation and foundation construction. The preparation of the foundation location certificate will determine if the foundation is at the proper elevation, location and if the wall drops match the building plans.

This process will allow you as the builder and/or homeowner to achieved control of the siting and elevation of the dwelling . If a problem arises, from unknowns such as depth of bedrock, soil water etc. and/or from improper excavation, changes could be made on a design build basis, thereby allowing you to review the progress of the construction and to have input on the final product.

The homebuilder / designer must prepare plans in conjunction with the site grading information established by the Surveyor/Engineer. The homeowner must become interactive during a review of the building plans and foundation type with the Builder and Surveyor to establish if the key components expected from the building plans are achieved.

Be prepared to pay between 1% to 2% of the construction cost for the preparation of the initial survey and site grading plans etc. The cost saving measures and satisfaction that you will achieved from having your desired building style will be enjoyed for years to come.

The preparation of site grading plans and building site advisory would be an important marketing tool for homebuilders to consider. The benefits of delivering customised products would increase customer satisfaction and sales.

Tom Giovannetti is an Engineer/Land Surveyor providing service in many areas of Nova Scotia from offices located in Dartmouth and Tatamagouche. For further information

call 1-800-210-1227, 434-4600 or e-mail civtech@ns.sympatico.