

Construction approaches to minimize impacts to archaeological sites

This document provides recommendations for construction approaches to decrease the volume and depth of ground disturbance, to limit impacts to archaeological sites, and potentially reduce costs for archaeological work.

Construction plans will benefit from consideration of location and methods for house construction, installation of utilities and electrical services, and landscaping. If you are planning to excavate into sediments that could contain protected archaeological sites, please work with your archaeologist to confirm appropriate authorizations are in place. **This document does not address *Heritage Conservation Act (HCA)* permitting requirements; please review your Management Decision Letter issued by the Archaeology Branch for property-specific guidance to ensure compliance with the HCA.**

Construction recommendations	
Foundation type	<p>Slab on grade has the least impact on ground disturbance. It is best suited in areas with minimal clean fill or where archaeological deposits are near the surface. Disadvantages to this type of foundation include challenges in installing and maintaining water and sewer services.</p> <p>A crawl space minimizes ground disturbance and simplifies the installation and maintenance of services. A crawl space supports storage, and heating and cooling equipment.</p> <p>Basements represent the greatest level of ground disturbance. Ideally, they should be put in locations where a previous foundation existed to take advantage of clean fill. To minimize ground disturbance, it is recommended that the basement be constructed above ground as much as possible. The deeper excavations required for this type of foundation result in two main risks to the owner or builder:</p> <ol style="list-style-type: none"> 1. An increased likelihood of encountering archaeological material. This will substantially slow down the excavation process and increase the cost for monitoring and sifting the removed soils. 2. Any displaced archaeological soils are the owner's responsibility – sediments must be screened or remain within the property.
Basements and building height	<p>Owners or builders may consider adding a second-storey instead of a basement. Consult with the Community Navigator for advice on building heights and bylaws.</p>

Building location	Past archaeological work may have resulted in identifying areas with low risk to archaeological deposits, which may be useful when relocating or orienting a structure. Consult with the Community Navigator for advice relating to lot lines and setback requirements.
Management of excavated materials	The management of excavated materials is the responsibility of the owner. Soils that contain archaeological deposits require a stockpiling plan. Generally, the soil would either remain on the property or be 100% screened. However, some archaeological deposits within the property may be repurposed (e.g., to backfill the existing excavations once foundations are poured and buried utilities are installed).
Site services and utilities	<p>Sewer and water The depth of services can extend deeper than the foundation. When owners submit a request for water or sewer services, Public Works will schedule a visit to assess the specific property to determine the depth of services and advise if it is likely to extend beyond the foundation.</p> <p>Electrical In some cases, the existing infrastructure will require an additional electrical pole to supply power to a residence. Hydro-vac and bored excavations involve the least risk to archaeological deposits please work with BC Hydro or your archaeologist to determine whether any archaeological work is required.</p>
Surface disturbances	Care must be taken when using tracked vehicles or heavy trucks where there is no clean fill as the tracks or wheels could damage archaeological deposits. A layer of six inches of clean fill over any areas where tracked vehicles or heavy trucks are likely to cross is recommended.
Tree planting, fencing, and minor excavations	<p>Excavations for tree planting, digging holes for fence posts, and other non-building activities all have the potential to disturb archaeological deposits and may require the authority of an HCA permit, so it's recommended these activities are included in your archaeological workplan, along with proposed construction.</p> <p>Since most trees and shrubs only require excavation to the depth of the root ball, it's recommended these are planted in clean fill.</p> <p>Follow these fencing recommendations to minimize the risk to archaeological sediments:</p> <ul style="list-style-type: none"> • Confine excavations to clean fill or areas with low risk to archaeological deposits • Use no-dig fencing or stakes • Consider using shrubs and hedges

Other guidance	
Geotechnical work and archaeology	All properties that received backfill also had geotechnical testing. The Village's Community Navigator can share this documentation with you. If you are proceeding with an excavation that is deeper than the added fill, you will likely require additional geotechnical work.
Determining depth of fill (consult your archaeologist on the best methods and application)	Determining the depth of clean fill can be accomplished in the following ways: <ol style="list-style-type: none"> 1. Test holes or excavations – The native sediments are a different colour than the fill material. In many cases, black geotechnical cloth was also added between native sediments and fill. 2. Photographs – There may be before and after photographs and aerial images of your property. Check with the Community Navigator. 3. Comparison of pre- and post-fill contour mapping to determine depth of fill.
Determining previous foundation locations	Keeping construction within the original excavation boundaries will help to maintain the deepest areas of clean fill and avoid expanding into areas with less clean fill or known archaeological deposits.

Contact

For support with understanding building permit requirements, contact the Village's Community Navigator by email at communitynavigator@lytton.ca or by phone 778-254-8586. Please direct questions regarding archaeological work to your archaeologist or the Archaeology Branch at LyttonHCA@gov.bc.ca or 250-953-3334.

More information

Find additional rebuilding resources, including more detailed explanations of archaeological requirements on the Village's website: www.lytton.ca/rebuilding.