Retaining walls

The excavation and construction of a building platform by a cut/fill or fill method will normally require some method to retain the fill material, which is prone to movement. The construction of retaining walls may be necessary.

Retaining walls can be constructed of materials such as timber, concrete, shotcrete, concrete block, brick or stone masonry and boulder construction. Each material has advantages and disadvantages, depending upon the performance requirements of the retaining wall.

A summary of [checklist items](http://www.masterbuilders.asn.au/building-and-planning/technical-information/retaining-walls#checklist) and [additional considerations](http://www.masterbuilders.asn.au/building-and-planning/technical-information/retaining-walls#considerations) for contractors are provided below. Members can also [contact Master Builders](http://www.masterbuilders.asn.au/contact-us) for further advice and guidance.

Retaining wall checklist

1. Consider providing at least 600mm clearance between the property boundary line and the closest part of the retaining wall where practicable. If this is not possible, the retaining wall will need to be located on the property at the boundary line that has the responsibility to retain the load (the position of the boundary will need to be established by a land surveyor).
2. Underground services will need to have suitable clearance from an imposed load of the retaining wall. Council and other infrastructure services may require different clearance dimensions to be specified by the relevant authorities prior to work commencing.
3. Seek the advice of a Registered Professional Engineer Queensland (RPEQ) to determine the most suitable design and construction method for the proposed retaining wall. The engineer should be made aware of all adjacent structures or specific site conditions that may have an impact on the retaining wall.
4. Obtain a copy of the signed and approved documents, including the certifier’s approval of the engineer’s design, before commencing work.
5. Ensure you are aware of the performance requirements and/or limitations of the materials intended for use, and explain these requirements to the client and subcontractors before commencing work.
6. Obtain a building approval if the retaining wall is greater than one metre in height (this dimension includes surcharge loadings), or the wall is located within 1.5 metres of a building or another retaining wall (as stated in the [Building Regulations 2006](http://www.masterbuilders.asn.au/laws-codes-and-regulations/building-act)).

A surcharge loading is a load applied to a soil stratum that has, or may have, the effect of consolidating the stratum, other than a load arising only from:

* + Persons or vehicles on, or moving over, the stratum
  + The effects of rain on the stratum.

For example, a concrete driveway laid over the stratum is a surcharge loading.

1. Supervision and inspection by the engineer at various stages of construction will need to be adhered to. These stages will possibly include excavation, reinforcement, subsoil drainage and the engineer’s final inspection. A certificate will need to be issued to the certifier by way of a [Form 16](http://www.hpw.qld.gov.au/SiteCollectionDocuments/form-16.pdf).
2. Obtain a final certificate from the private certifier.

Additional considerations

* If the retaining wall is a part of the building approval for the proposed structure, the final building approval will not be issued unless all the conditions of the approval have been met (this will include the retaining wall).
* Should the clients choose not to contract or they vary the contract during construction of a boundary retaining wall, and should the retaining wall form part of a larger building approval, further advice should be sought before work commences. In most cases, the lending authority is reliant upon a final building approval before issuing the final payment. Reflecting this, the builder may not be paid until these works are completed by others.
* All retaining walls are required to be built in accordance with engineering principles and good building practice. Retaining walls below one metre in height can be affected by surcharge loads. Upon that basis, they should be constructed in accordance with the product manufacturer’s design tables and technical guidelines. Retaining walls above one metre in height should be designed by an engineer (REPQ).
* Consider that if a structure is within the zone of influence of another structure (for a retaining wall, this means the volume of soil stratum behind the wall that affects the wall’s structural integrity), the construction of the wall may cause an effect on the adjacent structure. The original condition of the adjacent structure should be recorded for future reference by producing a dilapidation survey, which consists of photos, drawings and reports.
* Consider providing at least 600mm clearance between the property boundary line and the closest part of the retaining wall. This is so the fence, once constructed, has something solid in which to be positioned. The consideration of the boundary line is not as crucial in this circumstance.
* Drainage to retaining walls is an important consideration throughout the design process; several different methods of drainage may be employed. Consideration should be given to the method and discharge point of the drainage system, particularly if an existing system is to be used and there exists the possibility of a surcharge of the drainage system.
* Allowance should be made to prevent surface water from running over the top of the retaining wall, particularly with crib and boulder walls.
* Ensure that the customer is made aware in writing of any limitations of the materials or method of construction before commencing work. If the customer chooses not to accept the design, then a redesign and re-pricing may be necessary.