



Gladiator Seating System *Trafalgar Park Stadium Upgrade, Nelson, New Zealand*



Gladiator Seating System Provides Rapid Facelift for Rugby Stadium

The story behind the project

When the Nelson Bays and Marlborough Rugby Unions merged to become the Tasman "Makos" Rugby Union, it was quickly evident that the team had outgrown its existing stadium. In order to compete in the New Zealand Rugby Union's national provincial competition, the stadium would need a significant upgrade, and the Gladiator Seating System provided an economical, attractive, and expedient solution.

The uncovered wooden benches of the original stadium were in a state of disrepair, and the existing seating terraces and earth embankments were fatigued and too low to accommodate the number of spectator seats required by the New Zealand Rugby Union. To rectify this, retaining walls were constructed at the front, sides, and rear of the future facility, and fill was imported and compacted against the retaining walls to create the desired embankment height and gradient, prepping the site for the Gladiator Seating System.

Modeled on ancient stadium construction methods, the modular Gladiator Seating System is made up of two different types of concrete blocks – Seat blocks and Step-Aisle blocks – that are placed one behind another on a preformed earth embankment at a specific gradient. Because of the construction efficiency of the Gladiator system, it took only 28 working days to lay the 3,000 Gladiator seats and associated step-aisles once the new embankments had been constructed, saving the project considerable cost in construction time as compared to other construction methods.

The design included the addition of blue plastic seats, steel roofing, and landscaping of the embankments at the rear of the structures. The resulting grandstand design delivered a structure that met all of the requirements of the Rugby Union, complemented existing buildings, and came in within budget, including the landscaping.



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The seating system was constructed from the ground up, starting with a compacted base fill that was graded to the correct pitch.



After a concrete slab was poured on the graded bases, concrete seating modules were installed, consisting of separate Seat blocks and Step-Aisle blocks. Individual blue plastic seats were bolted to the concrete Seat blocks, allowing for easy seat replacement if damaged from use.



Before and after photos illustrate the dramatic Gladiator makeover that took only 28 working days to install.

About Belgard® Commercial Hardscapes

Belgard Commercial is part of the Oldcastle Architectural Group, the largest concrete products manufacturer in North America. With over 180 locations and a company culture characterized by a commitment to customer satisfaction, Oldcastle adheres to a level of service and consistency that no other supplier can match. Our combination of local market presence and national capabilities allows us to meet and exceed the demanding needs of an ever-changing industry.

PRODUCT:
Gladiator Seating System

PROJECT TYPE:
Municipal – Sports Stadiums/Facilities

LOCATION:
Nelson, New Zealand

INSTALLATION SIZE:
Stadium: 10,172 SF
Gladiator Blocks: 25,000
Spectator Seats: 3,000

APPROXIMATE VALUE OF INSTALLED HARDSCAPING:
\$1,050,000

PROPERTY OWNER:
Nelson District Council, New Zealand

CONTRACTOR:
Emerson Mytton Builders

DESIGN FIRM
Architecture DM Limited

ENGINEER:
Aurecon Consulting Engineers
(formerly Connell Wagner)

INSTALLER:
Peter Robinson Paving

AWARDS:
2009 Architecture DM Limited
Design of the Month



Gladiator Seating FAQ's

Why the Gladiator Seating System?

The Gladiator Seating System is a modular masonry concrete block system that achieves considerable cost and time savings when priced and constructed against traditional in-situ construction methodologies.

How are the Gladiator Seating System blocks manufactured?

The Gladiator Seating System is comprised of two masonry block units -- Seat Blocks and Step-Aisle Blocks -- that are manufactured on a quality block-producing machine available throughout the national network of Oldcastle manufacturing facilities.

How is the Gladiator Seating System installed?

An embankment is cut or filled to the required gradient and constructed with an engineer-designed toe or shear key footing at the front edge, or toe. After prepping the base, a 100mm (4-inch) mesh reinforced concrete slab is poured on the embankment and allowed to cure (24-36 hours). Gladiator block units are then laid as per the desired seating and step/aisle configuration with concrete mowing strips or a mortar 'key joints' to the sides, top and bottom to lock the system in place. It should be noted that many existing spectator embankment environments are customarily at the preferred Gladiator Seating System gradient, resulting in minimal construction earthworks costs.

Is the Gladiator Seating System time-consuming to construct?

On the contrary, the Gladiator Seating System installs quickly and efficiently, which translates to construction cost savings. As an example, a Gladiator Seating System for 500 people could be constructed on an existing embankment in seven working days by three suitably qualified and recognized installers.

Can the Gladiator Seating System block units be colored?

Yes, check the local Oldcastle manufacturing facility for available color options.

Can anyone purchase and install the Gladiator Seating System?

No, Gladiator is a licensed product and should only be installed by selected qualified and recognized contractors, or under the supervision of a Gladiator-trained and accredited installer.

Do Gladiator Seating Systems have a range of products?

Yes, we are continually working on new and innovative embankment seating and retaining ideas and would be happy to discuss solutions to your needs.

Our proposed site doesn't have an existing embankment – what can we do? With the use of a segmental retaining or Mega-Tandem wall product, we can create the 1:28 slope to allow for the design and construction of a Gladiator Seating System. Alternatively, the existing earth terrain can possibly be 'cut' out to create the facility platform, including the cut embankment sides.

What should I budget for a Gladiator Seating System?

A good cost estimate would be \$225.00 per seat. Typically, this includes construction setting out, minimum earthworks and base preparation, shear key footing construction, pouring a 4-inch reinforced concrete slab, and the installation of the Gladiator Seating blocks and end caps. Naturally, this

would be subject to the suitability of existing site conditions, location and relocation of existing services, and site access.

Can the Gladiator Seating System be installed in a curved configuration?

Yes, regulation seating can be constructed around a curve radius.

What about the inclusion or use of services within the proposed seating facility?

The Gladiator Seating System is made up of hollow modular concrete blocks. Any cabling, piping, or ducting of required services can easily pass through the horizontal cores of the seating system in any direction and at any level.

Do we have to fit plastic seat shells onto the Gladiator Seating System?

Although the Gladiator Seating System will accommodate the fitting of plastic seat shells, it is not a necessary or mandatory requirement, but is an optional enhancement. The Gladiator Seating System is designed to be comfortable in its natural state.

If the Gladiator Seating System blocks should become damaged or broken, how are they repaired or replaced?

Gladiator blocks are not fixed to the concrete base, but are 'locked' in place by a narrow mortar 'key joint' or by the inclusion of a walkway running along the back row of blocks at the top of the embankment. This allows two straight-forward options available to a contractor to replace broken or damaged blocks.

Option 1 would be to restrain the blocks both above and adjoining the damaged blocks, which restricts the 'good' blocks from slipping down the slope. The damaged blocks can then be completely broken out and extracted, leaving a clean space on the base slab. Replacement Gladiator blocks can then be inserted back into the space. The new replacement block or blocks may require a minimal amount of grinding around the base edges to ease the insertion if the space is very tight.

Option 2 would be to break out the top mortar 'key joint', or cut a narrow slice of walkway at the top of the embankment, along the row or rows with damaged blocks. The damaged blocks can then be lifted out and replaced. This methodology would take more time, as it would possibly require the removal of a number of healthy blocks to get to the damaged block(s) in that row.

