

Safer seating for standing fans

A case study: Celtic Football Club

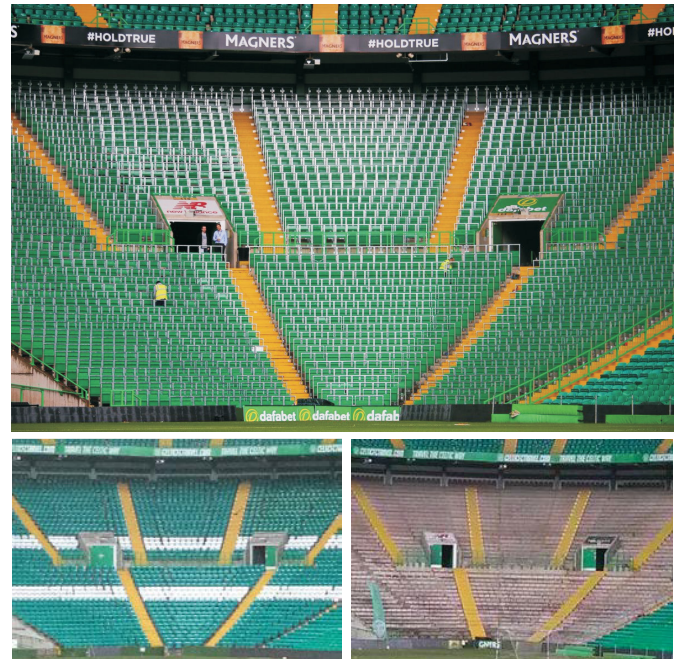
“Across football globally, the reality is that some supporters are choosing to stand at matches.

This is something we must manage. We must also understand the positive effect that these areas have on atmosphere at matches.

Celtic’s primary objective will always be the safety and comfort of its supporters – this new system will now allow fans to stand safely at matches.

We are sure the rail seating section will prove very popular with supporters and we look forward to its introduction.”

Peter Lawwell, Chief Executive, Celtic Football Club, June 2015



Peter Lawwell made these comments at the end of a long process in which the club looked for a way to provide standing fans in their all-seater stadium with a safer form of accommodation, while simultaneously satisfying the requirements of Glasgow City Council and, for the club’s appearances in European club competitions, those of UEFA. The process resulted in the conventional seats in one quadrant of the stadium being removed and replaced with rail seating, as shown by the images above: fitted with conventional seats (bottom left), with the seats removed (bottom right) and fitted with rail seats (top).

The challenge

Celtic Park is a football stadium in Glasgow. It has a capacity of just over 60,000. Since 1995, it has been an all-seater stadium. As at many all-seater grounds, a significant number of spectators opt to watch the game standing up. Over recent years, this has particularly been the case in one area of Celtic Park: the northeast quadrant of the lower tier.

As indicated in the chief executive’s comments above, Celtic appreciate *“the positive effect which these areas have on atmosphere at matches.”* However, they were concerned about the safety implications of several thousand fans standing directly behind conventional seats that can act as a fulcrum against spectators’ shins and induce progressive crowd collapse.

The challenge was to find a way to embrace the positive effect on atmosphere provided by these fans, to remove the potential hazard presented by the low seat backs and to satisfy all the requirements of the local authority, the Scottish football authorities and UEFA.

The regulatory background

Football grounds in Scotland are not governed by the 1989 Football Spectators Act.

Scottish Premier League grounds had gone all-seater in order to fall in line with the general recommendations of the Taylor Report, not as the result of any legal requirement. As it became increasingly apparent over the ensuing years that a significant number of spectators still preferred to stand and were doing so throughout entire games in areas that did not provide them with any means of support in the event of a forwards stumble, Scottish clubs therefore had more freedom than their counterparts in England and Wales to start discussions with their respective football and safety authorities about alternative, more appropriate forms of spectator accommodation for such fans.

Celtic began to do this almost 10 years ago. By 2011, Stadium General Manager Robin Buchanan’s favoured option was rail seating and he invited the Safe Standing Roadshow to Celtic Park (pictured right) to help explain the concept to fellow club executives.

Following subsequent representations from the club to the Scottish Premier League, the latter announced in December 2011 that member clubs would be permitted to install trial areas of rail seating, subject to gaining approval from their local council and police.



In March 2012, Celtic formally submitted a Building Standards application to Glasgow City Council for “Alterations to north east quadrant lower tier, with a safe standing system”.

Meanwhile talks about restructuring the Scottish leagues were ongoing and in June 2013 the new Scottish Professional Football League was formed. Its rules relating to stadium infrastructure require the grounds of clubs playing in the top two tiers to hold a Scottish FA Bronze Licence. Clause 5.13 of that licence, relating to ‘Spectator Areas’ states that in such grounds ‘There may be seats and standing’.

In terms of football rules and regulations, the way was therefore clear for clubs such as Celtic to provide standing accommodation at their grounds, be it in the form of traditional terracing or in the new form of rail seating.

Local council safety requirements, however, still had to be met. Celtic’s discussions on this front continued with Glasgow City Council throughout 2014 and 2015.

Meetings of the club’s Safety Advisory Group considered the rail seating plans in June and August 2014 and after requesting some modifications the SAG approved them in June 2015.

On 7th January 2016, the Building Warrant was formally granted.

The agreed solution

To enhance the safety of standing fans it was agreed to install rail seats.

This would be done in the northeast quadrant of Celtic Park’s lower tier, an area fitted with a total of 2,975 conventional seats.

The deck, which dates from 1996, is constructed of pre-cast concrete treads. Each row has a depth of 700mm. The existing flip-up seats had an overall depth of 280mm in the upright position, leaving a clearway of 420mm. Each seat module had a width of 460mm.

The rail seat modules to be installed are likewise 460mm wide. The rail support uprights are 50mm deep. When tipped up, the rail seat fits flush between the uprights, leaving a clearway of 650mm.

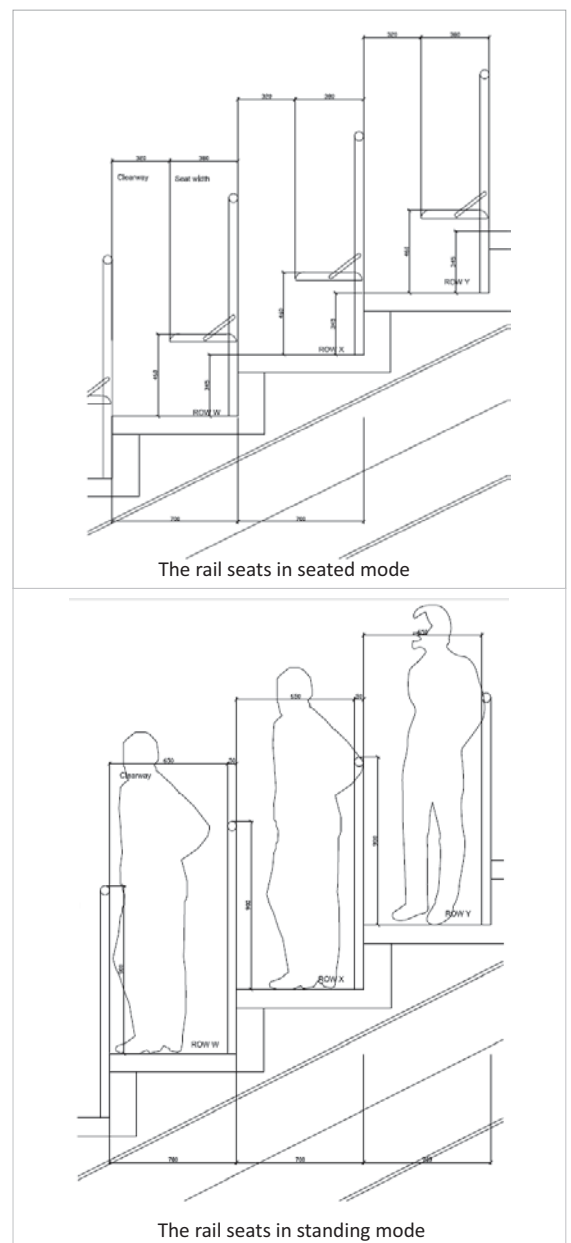
The new rail seats have an overall depth of 380mm in the down position, leaving a clearway of 320mm (pictured top right). Green Guide Section 12.14 calls for existing stadia to maintain a clearway of 305mm.

The standing rail support is 50mm thick and 900mm high.

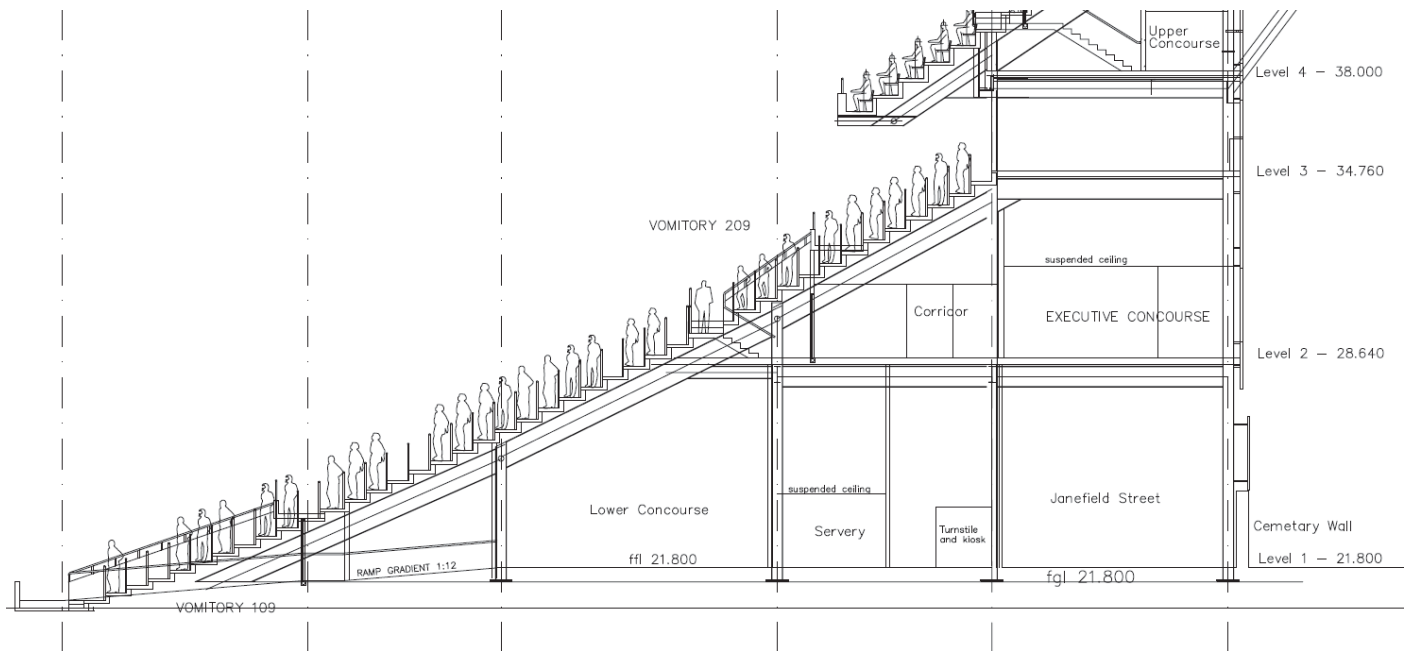
The deck angle varies from the front to rear, from 21 to 29.5 degrees.

When the area is used as seated accommodation, the rails will leave unobstructed sightlines with C-values of not less than 90. In such use the rail is similar in height and location to that of a barrier in front of a row of standard seats or in front of the first row on an upper tier.

When the area is used as standing accommodation (pictured bottom right), it will likewise provide unobstructed sightlines with C-values of not less than 70. In such use, having one barrier rail per supporter will ensure that the requirements relating to viewing conditions for standing spectators set out under Section 13.3 of the Green Guide are met.

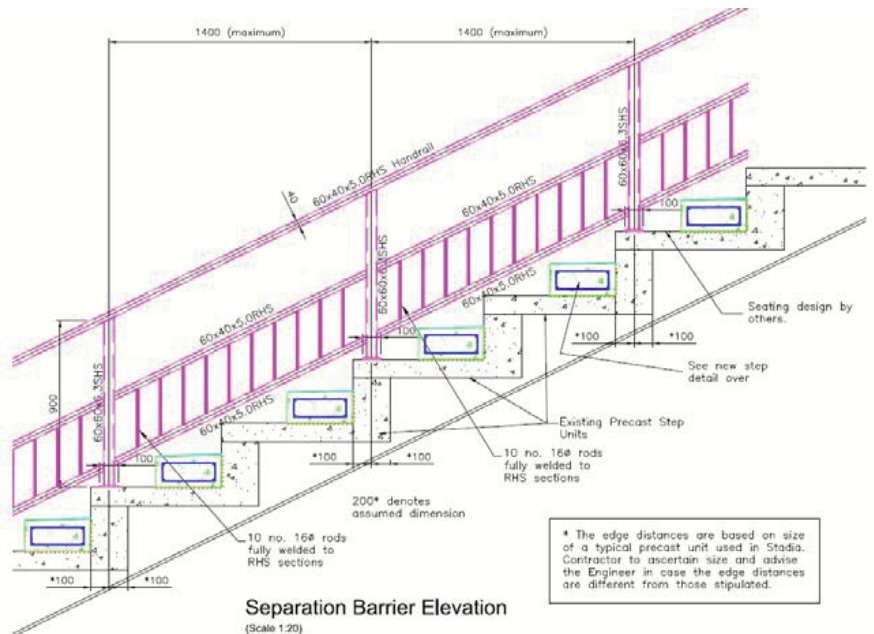


The spectator rails are located at the rear of each row as recommended in diagram 11.4, illustration 1 of the Green Guide. They thus provide clear space for each standing spectator. Providing a horizontal imposed loading of 2.0kN/m, the rails exceed the Green Guide requirement for a minimum of 1.5kN/m. The positioning of the rows 0.7m metres apart exceeds the parameters set out in Table 11.2 of the Green Guide and thus ensures spectator safety on every row, including those where the rake exceeds the Green Guide's recommended maximum of 25 degrees for conventional standing areas with more widely spaced barriers.



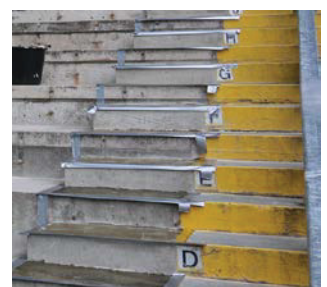
It was recognised by the Safety Advisory Group that the area fitted with rail seats was likely to prove extremely popular with supporters. This in turn led to some concern that spectators in the adjacent areas of conventional seating might be tempted to migrate across into the rail seating area. It was therefore agreed to install physical barriers to deter any such migration.

To achieve this, the radial gangways at either side of the rail seating area were widened and a barrier fitted down the centre of each (as shown below) to separate the rail seating area from the respective adjacent area of conventional seating.



The barrier is constructed of steel rectangular hollow sections with a continuous handrail at a height of 900mm and an SLS load of 2kN/m at 1100mm.

New reinforced concrete steps (pictured right) were installed on the widened gangways.



The finished rail seating area has a total of 2,975 rail seats, i.e. the conventional seats were replaced one for one.

Popularity / season ticket sales

The rail seating area has proved to be extremely popular. During the season ticket renewal processes in both early spring 2015 and 2016, supporters were asked to indicate if they would be interested in a ticket for the rail seating section as and when it was ready for use. This resulted in expressions of interest from 5,988 supporters.

When season tickets went on sale for the rail seating section in May 2016, a process was put in place to enable existing season ticket holders in that area who did not wish to stand in future to relocate to another area of the stadium at no extra cost. 470 supporters were relocated in this way.

Once this relocation process had been completed and season tickets in the rail seating area had been offered to all supporters who had previously expressed an interest, all 2,975 seats in that area had been sold. There is now a waiting list to buy a season ticket in that area as and when any become available in future. The number of fans on that list is currently 2,960.

While the rail seating section has not added to the stadium's overall capacity, and in fact 120 seats were removed from the adjacent areas of conventional seating to meet Glasgow City Council's requirement for wider radial gangways on each side of the rail seating area, it contributed to a mood of excitement around the club over the summer of 2016 that saw total season ticket sales exceed the level for previous years by around 10,000.

"We feel there is a new vibrancy in football that has come from Europe and is now in the UK. It's an energy and youthfulness and the safest way of embracing and managing this is with safe standing."

"We are sure the rail seating section will prove very popular with supporters and we look forward to its introduction."

Peter Lawwell, Chief Executive, Celtic FC



Photo: Robin Buchanan

In the design and layout of the rail seat area Celtic FC was advised by Gareth Yule from architects Holmes Miller and Jim Travers at engineers Blyth and Blyth. Advice on aspects of stadium safety was provided by Dr Steve Frosdick. Advice on rail seating was provided by Jon Darch of the Safe Standing Roadshow and by manufacturers Ferco Seating Ltd, who also supplied and fitted the seats.