

GUIDE TO COLOUR BLIND FRIENDLY STADIA

WHAT IS COLOUR BLINDNESS?

We see colour through three types of cone cells in our eyes, which absorb red, green and blue light. With colour vision deficiency (CVD) one type doesn't operate normally. Most types of colour blindness involve defects in red or green cones, meaning many colour combinations can be confusing.

THE IMPORTANCE OF CVD FOR STADIUM OPERATORS

Colour blindness can affect up to 6% of people in a stadium at any one time, including:

- spectators
- management
- staff (including stewards)
- any other people in attendance e.g.
 - media
 - players
 - emergency services personnel

At a Premier League stadium there could be as many as 80 colour blind stewards at an individual game/event, and many will be undiagnosed.

CHALLENGES FOR STADIUM MANAGERS

Stadium operators are responsible for ensuring the smooth running of emergency procedures. Colour-coded training materials, stadium maps or emergency routes are often confusing or indistinguishable to people with CVD, which can impact their ability to:

- evacuate a stadium
- follow instructions
- carry out a role effectively e.g. stewarding

The consequences can be significant and potentially dangerous.

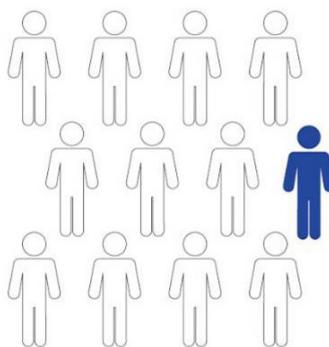
SOURCES OF INACCESSIBLE INFORMATION

Common examples of information which can be problematic for people with CVD to understand include:

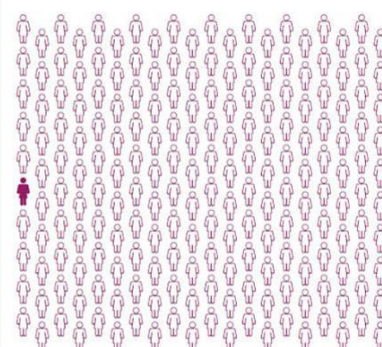
- stadium plans/wayfinding information/ticket details
- emergency exit and emergency locations
- emergency procedures
- training materials
- architects' and other technical plans
- Operations software e.g. gate monitoring
- Operations equipment e.g. fire control panel

Colour blindness is one of the world's most common inherited conditions. Statistically, it affects:

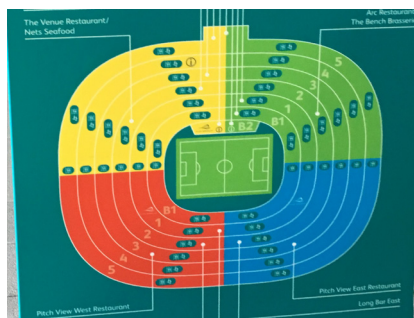
1 IN 12 MEN



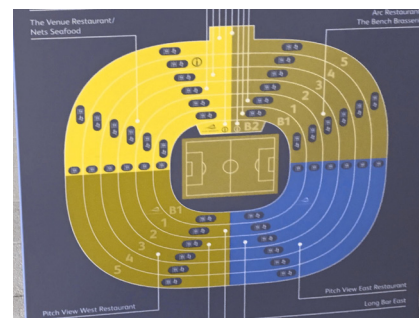
1 IN 200 WOMEN



That's approximately 300 million people worldwide.



1a: Normal colour vision



1b: Simulated CVD



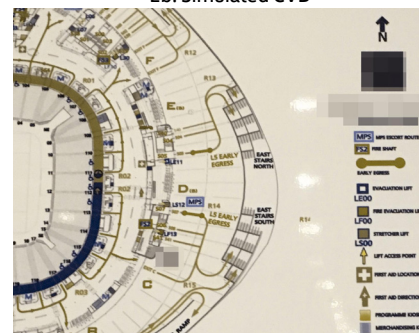
2a: Normal colour vision



2b: Simulated CVD



3a: Normal colour vision



3b: Simulated CVD

WHAT CAN BE DONE?

There are some easy remedies which don't mean not using colour – far from it. Information provided by colour alone is not enough, so solutions lie in ensuring all information has a secondary form of labelling that doesn't rely on colours. Some examples are:

- using shading, patterns, underlining, additional labelling or symbols in addition to colour
- placing emergency equipment and signage against a yellow background so it will stand out
- simplifying plans to remove unnecessary information
- highlighting emergency exit routes on plans in yellow

NEXT STEPS

A quick audit of your stadium will show you where some of the problems may lie. Check:

- totems and other wayfinding signage
- locations of emergency exit signs and equipment remembering reds and greens won't stand out for people with CVD
- stadium plans
- software, especially in the control room
- emergency procedures e.g. avoid red/amber/green prioritising
- training materials

There are tools you can use to digitally check that important information is accessible – simulators such as Colour Contrast Analyser and Snook are available online.



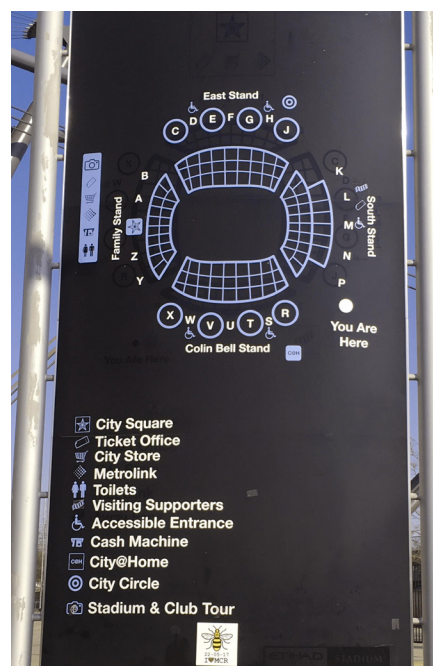
4a: Normal colour vision



4b: Simulated CVD



Normal colour vision



Simulated CVD - good practice

TOP TIPS AND EASY FIXES

- Edge emergency routes and equipment in yellow or mount against a yellow background
- Don't use colour only to highlight information
- Label stadium plans, etc. rather than relying on a colour-only key
- If labelling is inappropriate consider shapes, patterns, symbols, etc. instead
- Clearly define boundaries between different sections by outlining with a strong contrast colour such as white or black
- If emphasising important information in text using colour ALSO use other effects such as italics, bold font, different font size or underlining.

Further information

For more information see <http://www.colourblindawareness.org/colour-blindness-and-sport> and The Sports Ground Safety Authority's Guide to Safety at Sports Grounds 'Green Guide' – 6th Edition, in particular Annex C <https://sgsa.org.uk/wp-content/uploads/2018/10/Annex-C-Guidance-on-colour-vision-deficiency.pdf>

