

Appendix 3: Screened ZTV Methodology

Screened ZTV

A screened ZTV (Zone of Theoretical Visibility) is a detailed approach to establishing the theoretical extent of visibility (or viewshed) of a proposed development on the surrounding landscape. As well as assessing the visibility on the local terrain, screening elements such as buildings and substantial vegetation are included in the model to help produce a more realistic viewshed.

ESRI ArcGIS software has been used to model the proposed development parcels and run the viewshed analysis. OS terrain 5 (5m resolution/cell size) digital terrain modelling (DTM) raster data has been used to create the surrounding terrain. Ordnance Survey (OS) Open Map Local data has been used for the screening elements, which includes existing buildings and larger blocks of woodland and tree belts; locally occurring hedgerows, individual or small groups of trees or buildings have not been modelled and therefore may locally screen or control views toward the proposed development (see **Plan 1** - drawing P16-0631_43B 13m Woodland). All existing buildings on the site, as well as areas with approved planning permission have also been included as screening elements. Buildings and woodland have been modelled at 8m and 15m respectively.

Each proposed development parcel has been modelled in accordance with the latest building heights parameter plan (drawing no. P16-0631_08, Sheet 2, Revision G) and 1.5m has been added to each of these to take into account potential final ground levels due to drainage and cut and fill. The entire area of the sports pitches (parcel 18) has been used to generate the 18m height block for the proposed flood lights, although these would comprise discrete towers set around the sports pitches. Each development parcel has also been used cumulatively as screening elements in order to show the visibility once all areas have been developed.

The viewshed has been calculated by determining whether points within the proposed development (modelled at the appropriate height) can be seen from each cell within the raster DTM. The visibility of each cell centre is determined by comparing the altitude angle to the cell centre with the altitude angle to the local horizon and screening elements. The local horizon is computed by considering the intervening terrain between the point of observation and the current cell centre. If the point lies above the local horizon and screening elements, it is considered visible.

Information about which raster datasets have been used, viewer height, proposed development and any other standard calculations, are always included as a caveat on each plan produced.

A separate ZTV has been generated for each separate building height zone (5m, 10.5m, 13m, 18m, 18m Sports Pitch Floodlights, 30m and cumulative (heights 5m to 30m)) and the areas within which views may potentially be gained toward the proposed development are shaded yellow:

- Plan 2- P16-0631_75A SZTV 5m
- Plan 3 - P16-0631_43B SZTV 10.5m
- Plan 4 - P16-0631_45B SZTV 13m
- Plan 5 - P16-0631_47B SZTV 18m
- Plan 6 - P16-0631_48B SZTV 30m Tower
- Plan 7 - P16-0631_49B SZTV 5m to 30m Cumulative
- Plan 8 - P16-0631_112 SZTV 18m Sports Pitch Floodlights

Table A summarises an analysis of the ZTVs to show the potential visibility of the proposed buildings for each of the assessed viewpoints.