

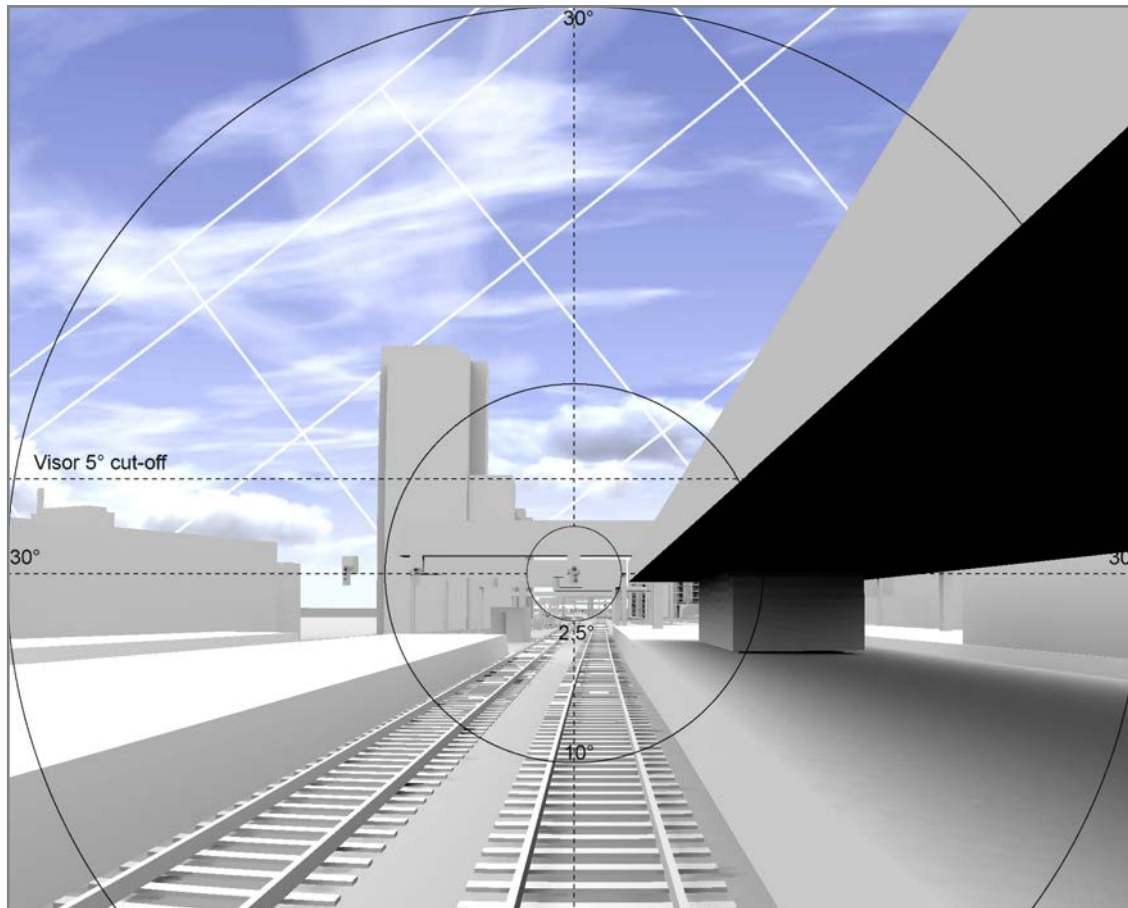


Fig. 30: Solar Glare - HOURS - Close-up

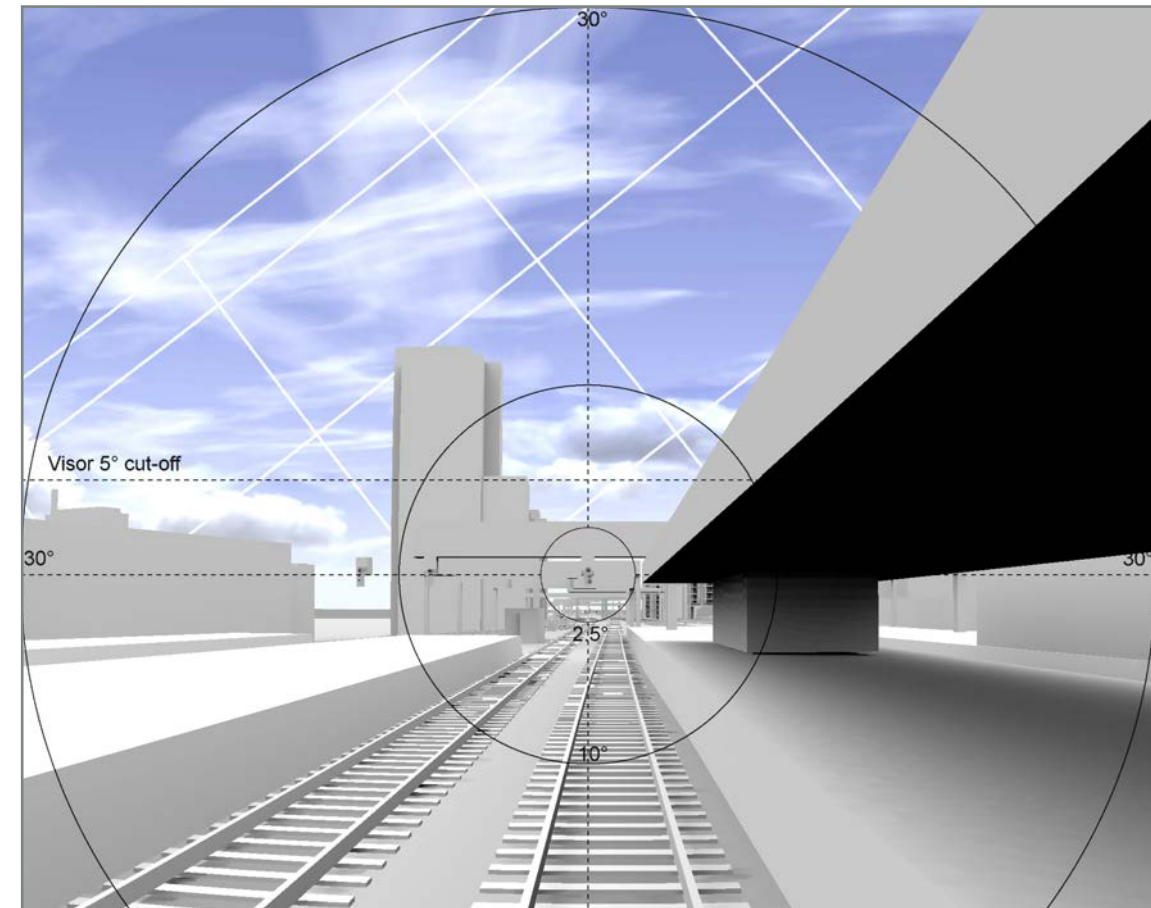


Fig. 31: Solar Glare - MONTHS - Close-up

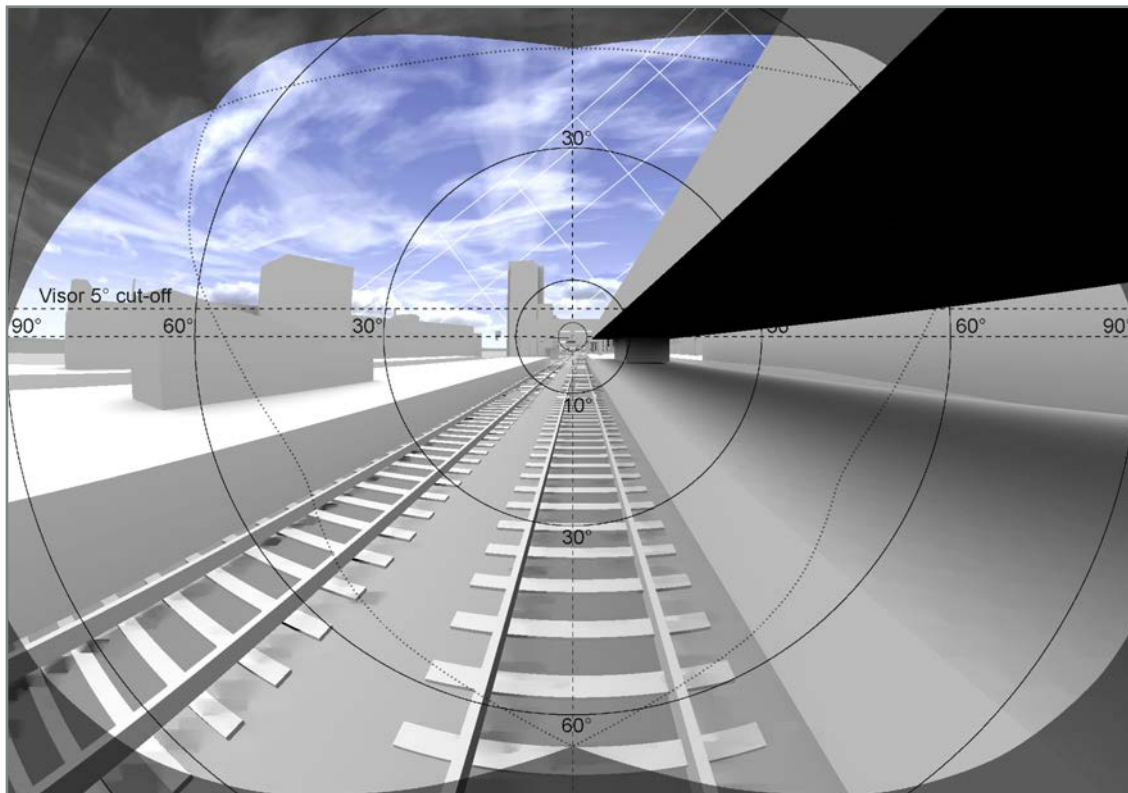


Fig. 32: Solar Glare - HOURS - 180 degrees view

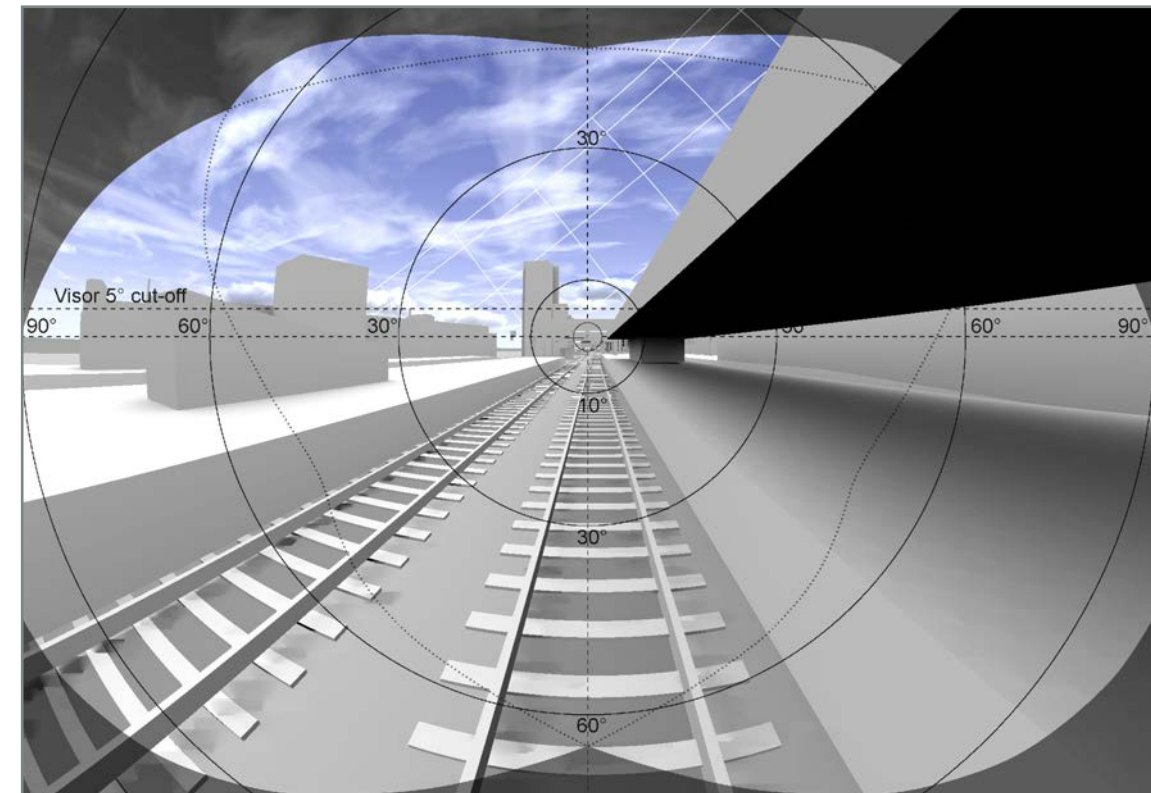
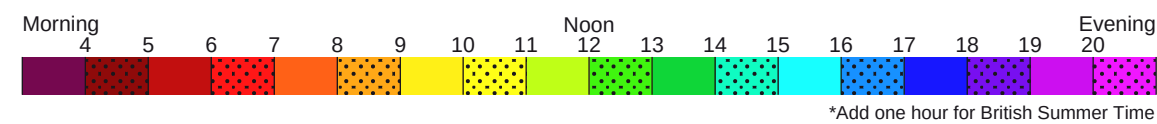
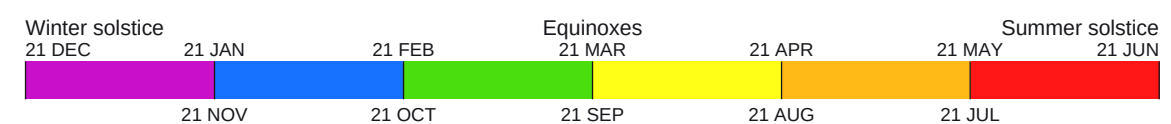


Fig. 33: Solar Glare - MONTHS - 180 degrees view



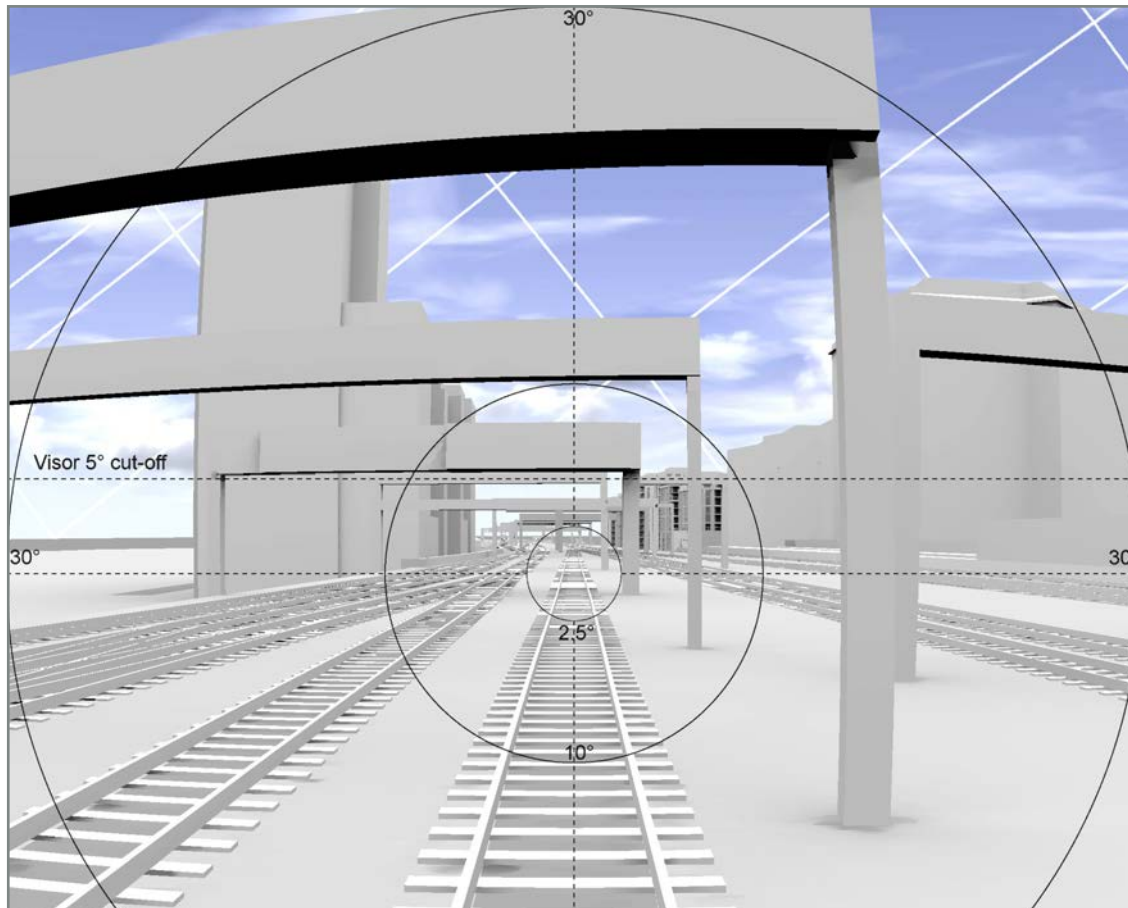


Fig. 34: Solar Glare - HOURS - Close-up

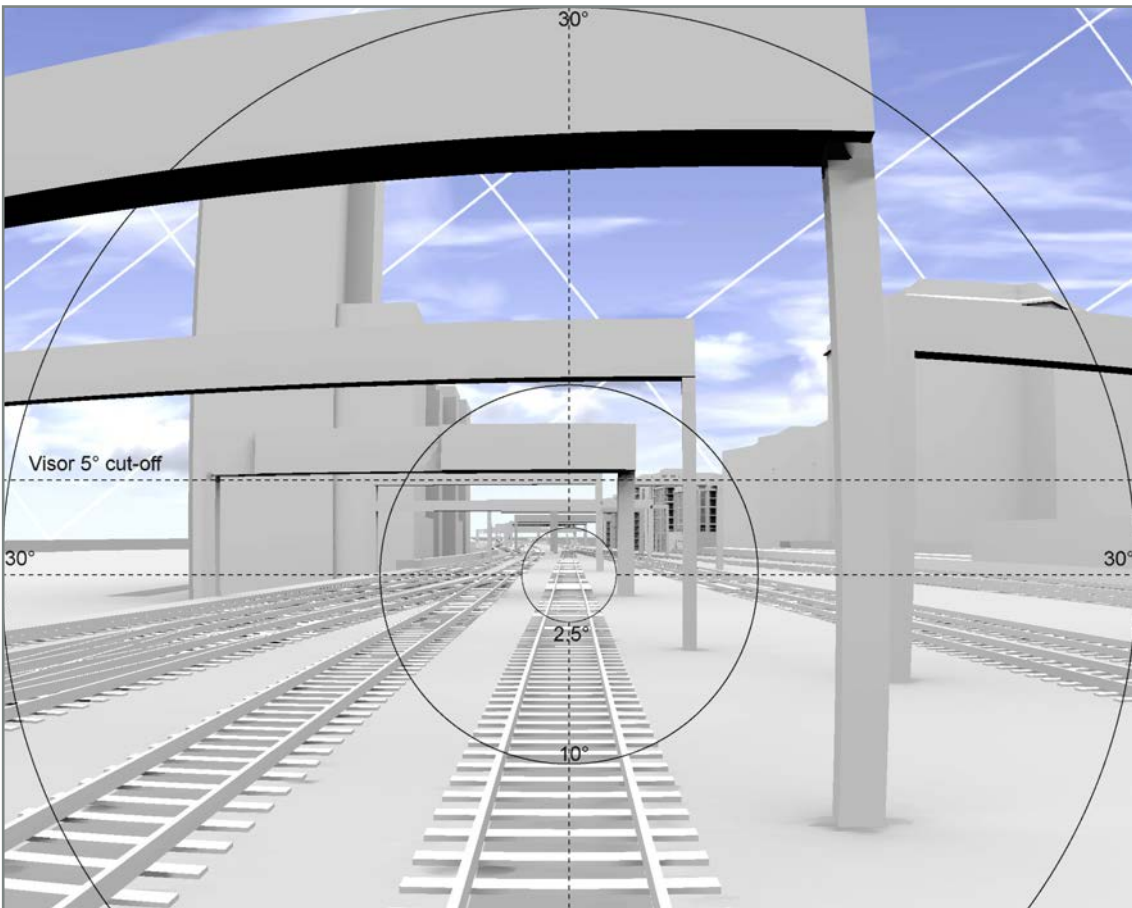


Fig. 35: Solar Glare - MONTHS - Close-up

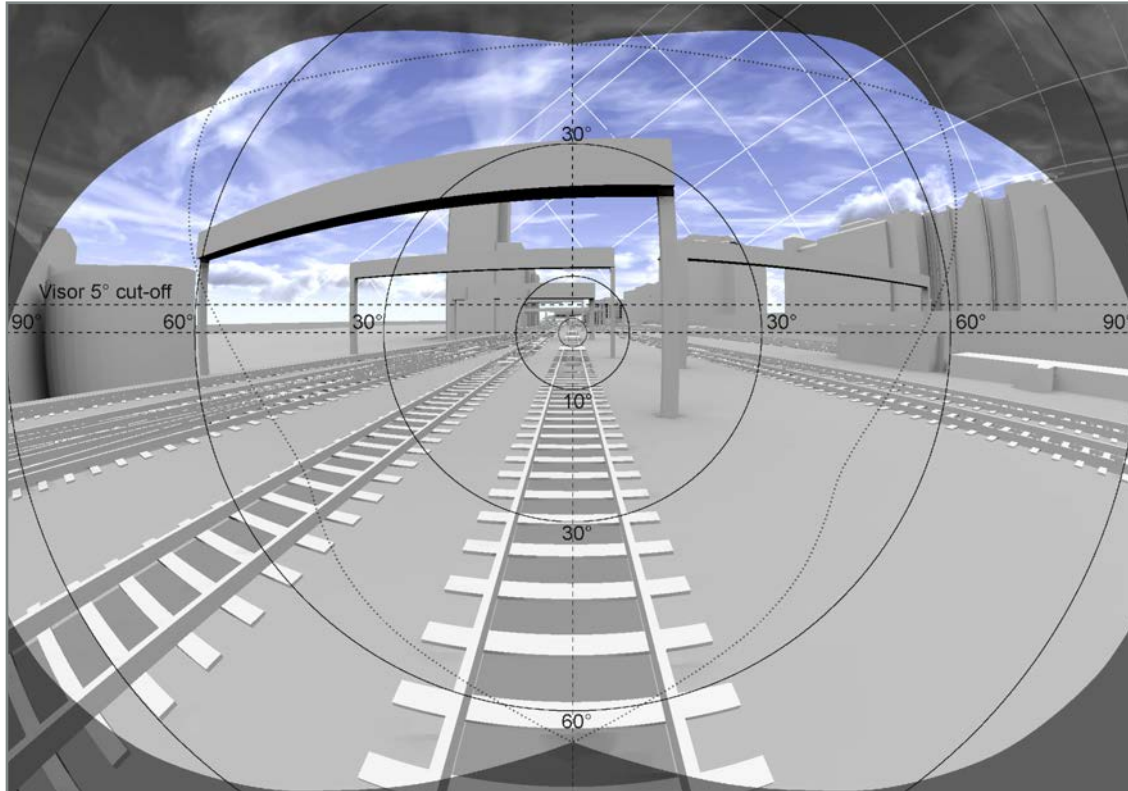


Fig. 36: Solar Glare - HOURS - 180 degrees view

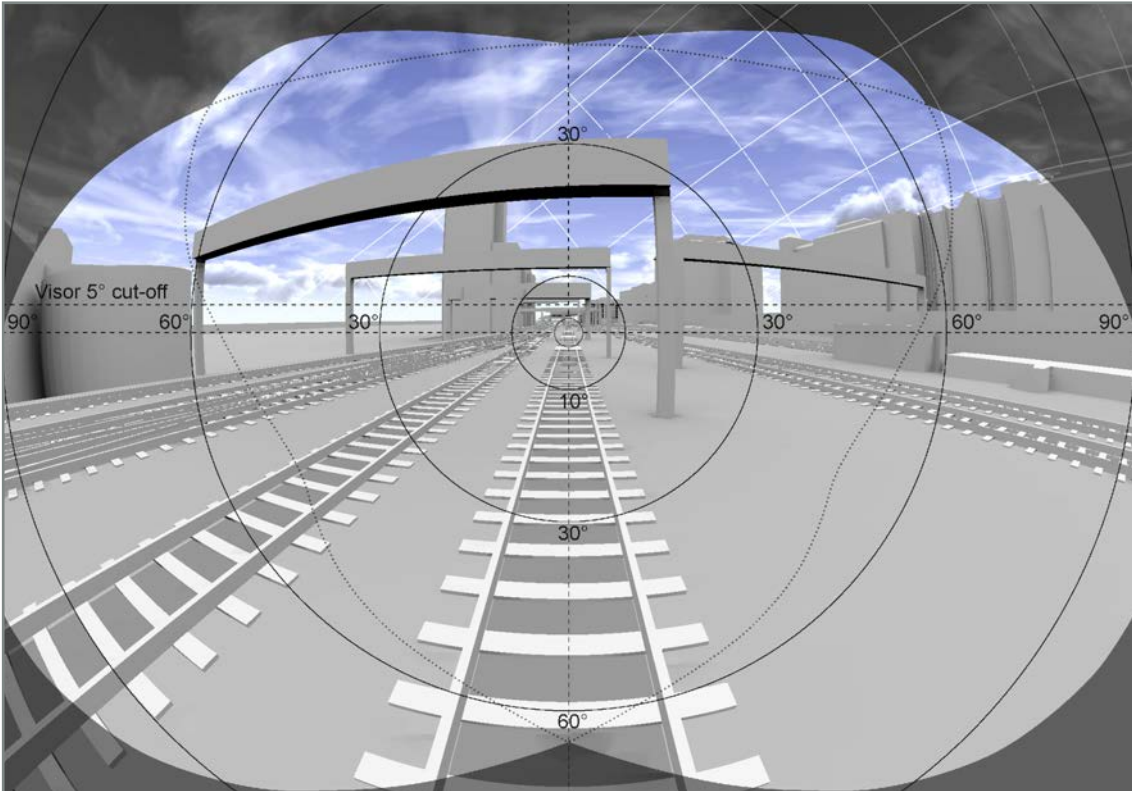
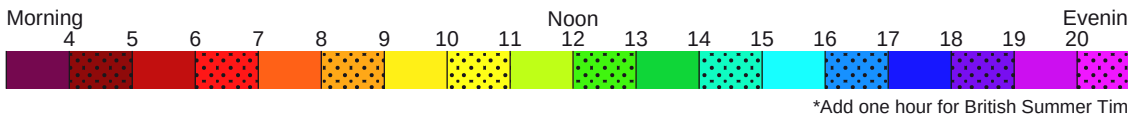
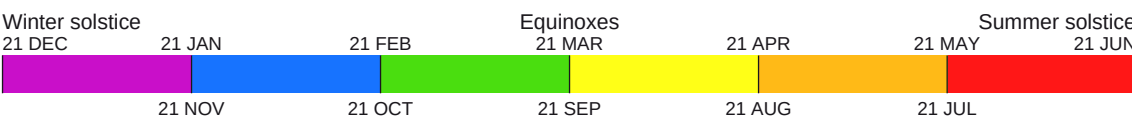


Fig. 37: Solar Glare - MONTHS - 180 degrees view



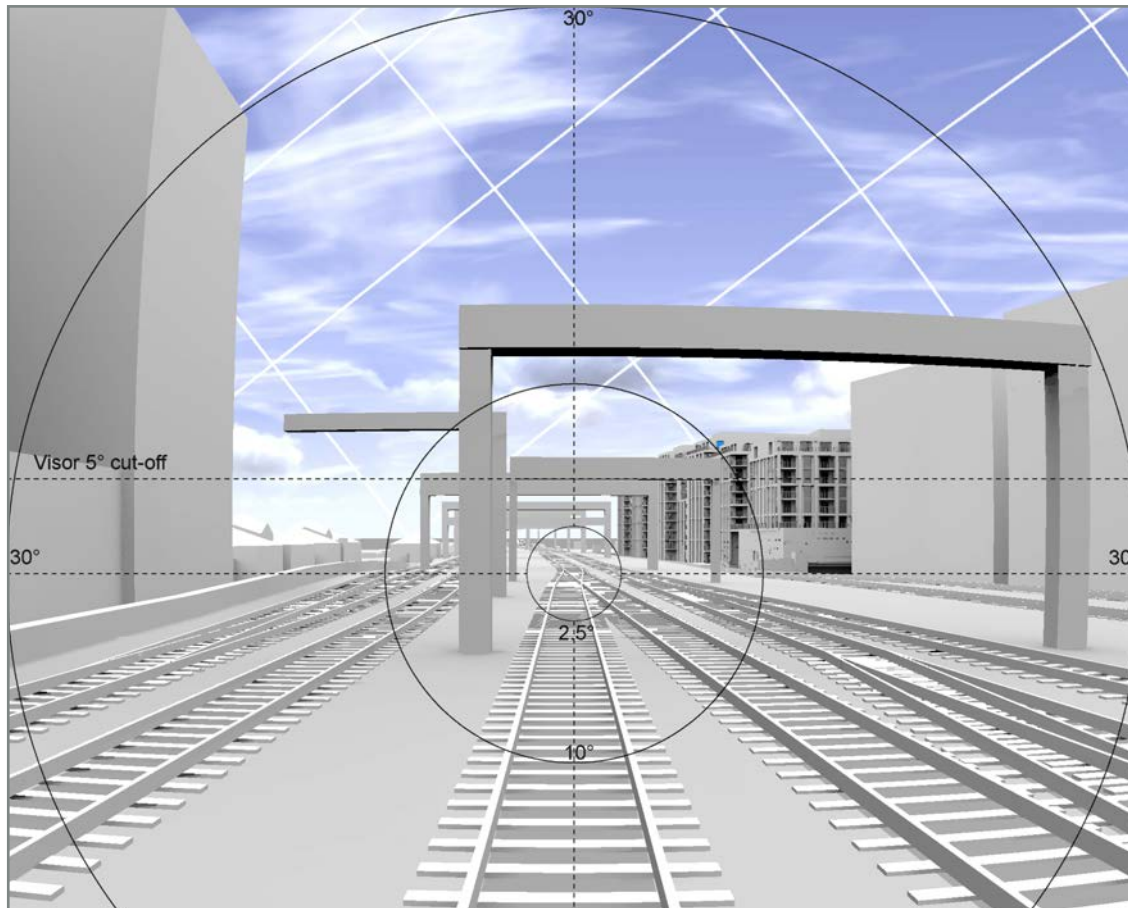


Fig. 38: Solar Glare - HOURS - Close-up

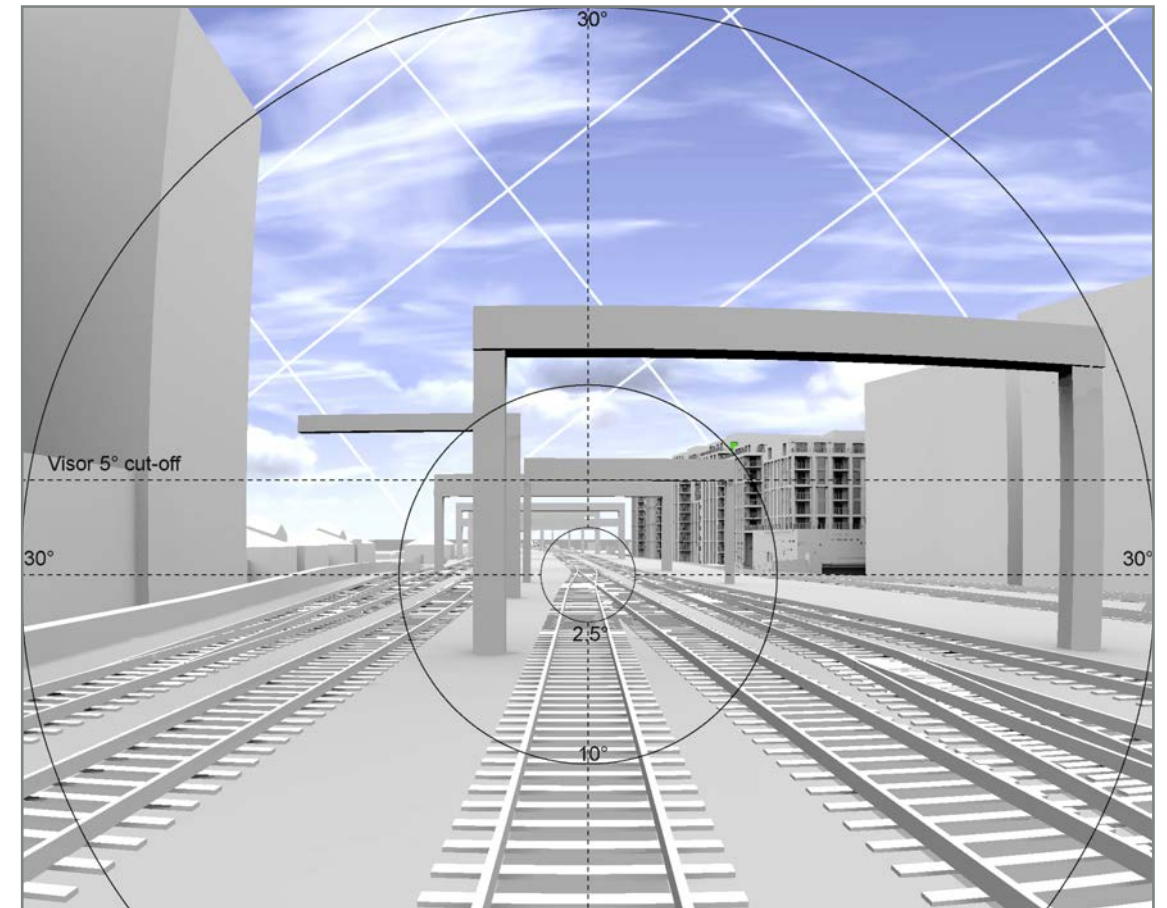


Fig. 39: Solar Glare - MONTHS - Close-up

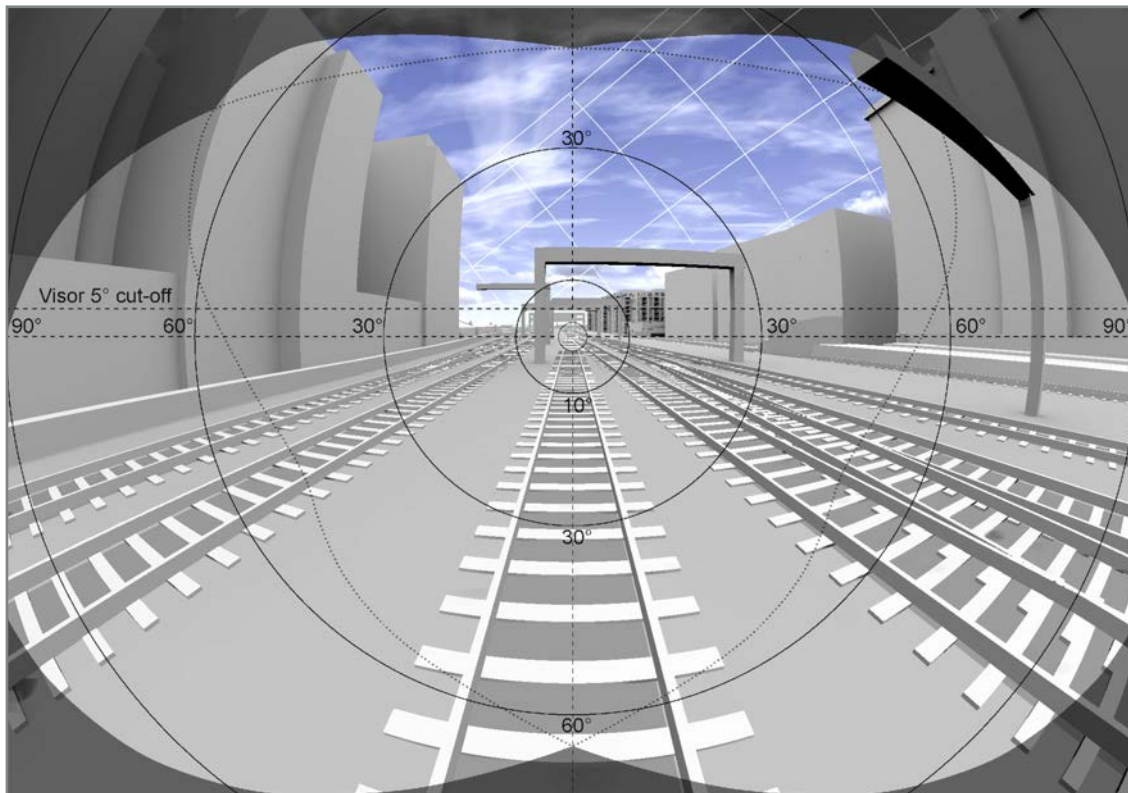


Fig. 40: Solar Glare - HOURS - 180 degrees view

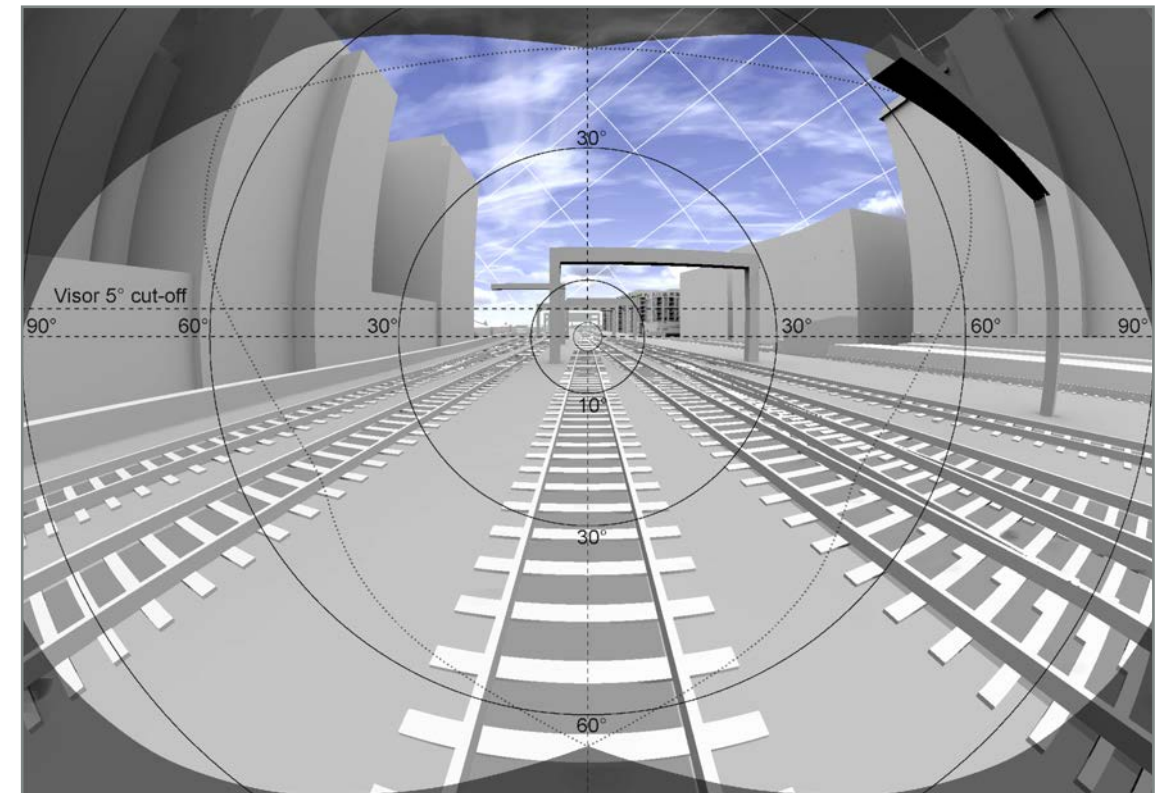
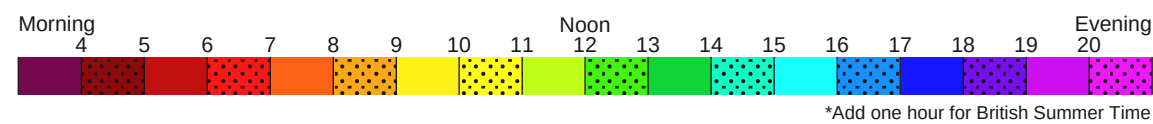
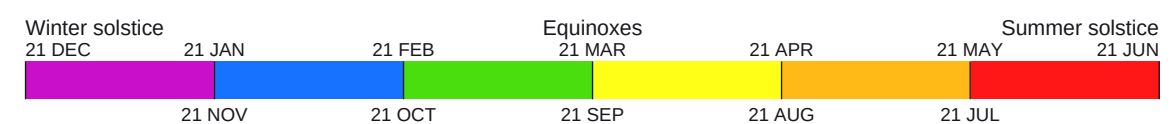


Fig. 41: Solar Glare - MONTHS - 180 degrees view



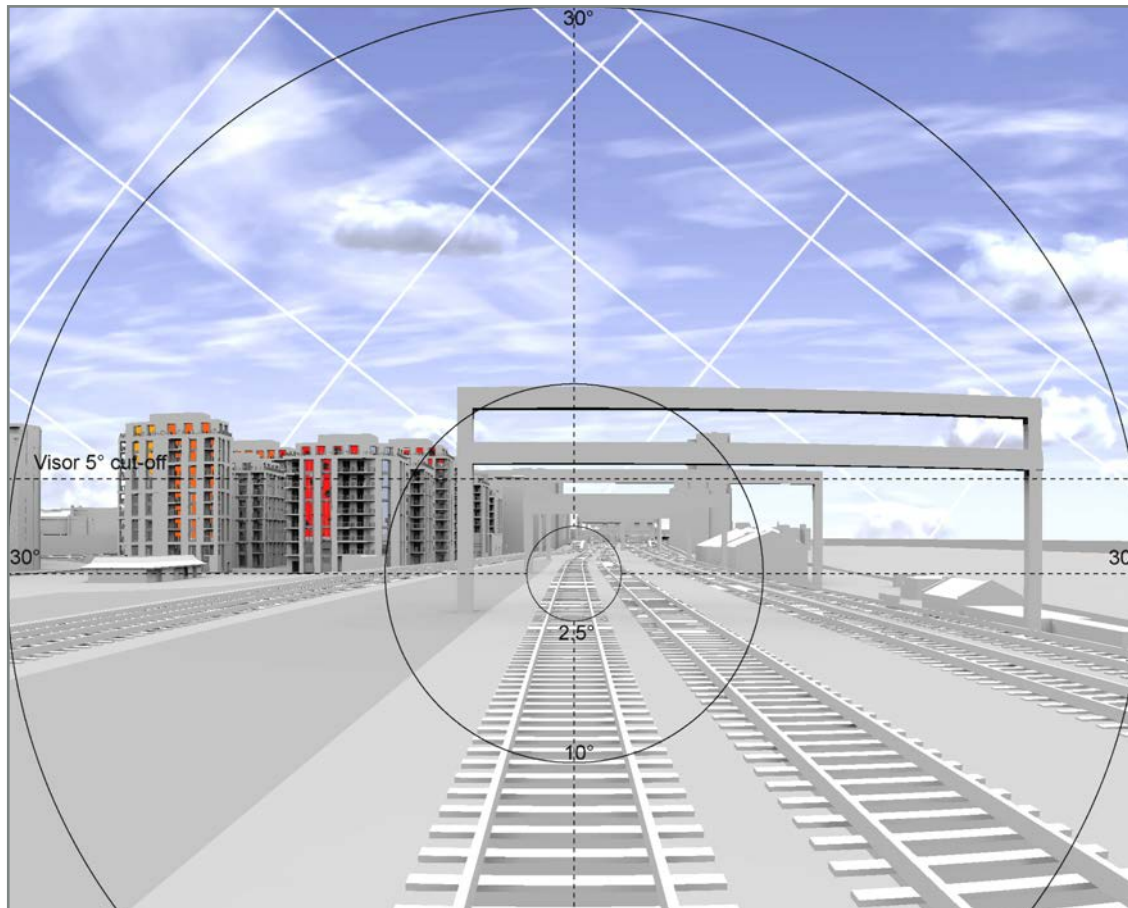


Fig. 42: Solar Glare - HOURS - Close-up

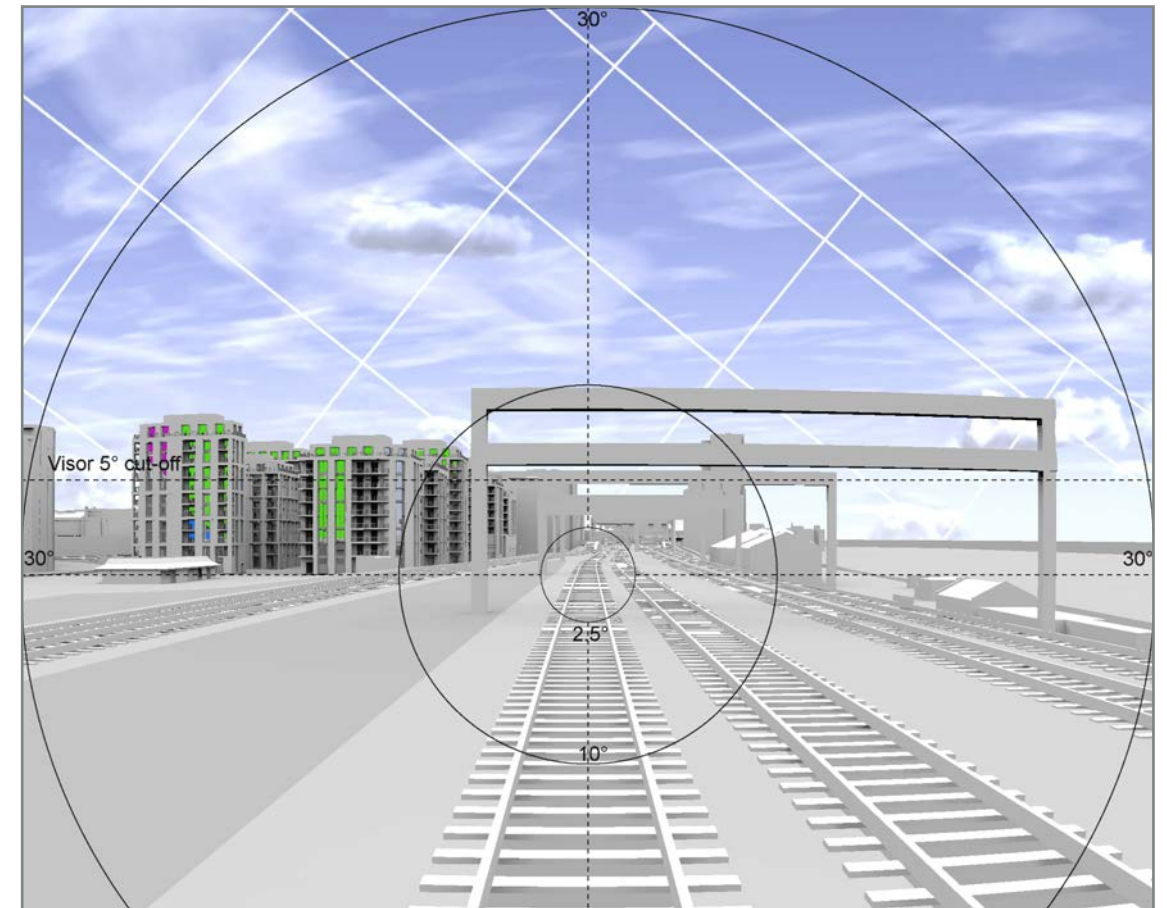


Fig. 43: Solar Glare - MONTHS - Close-up

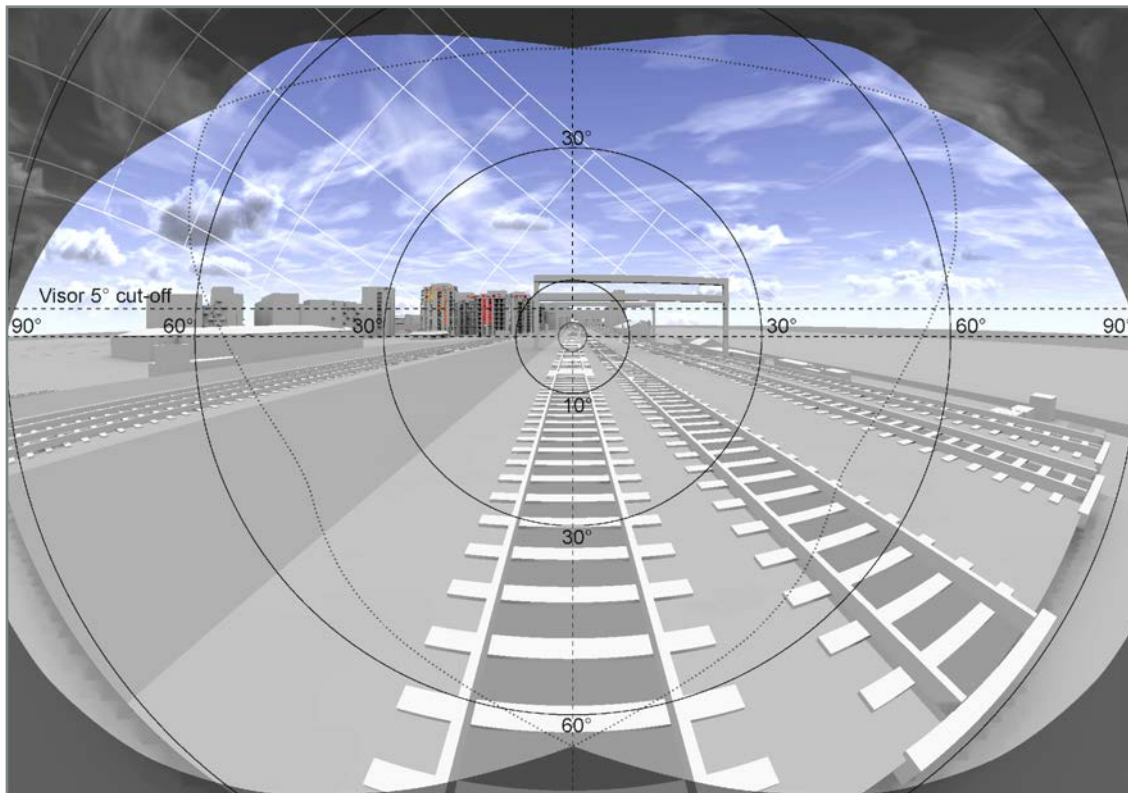


Fig. 44: Solar Glare - HOURS - 180 degrees view

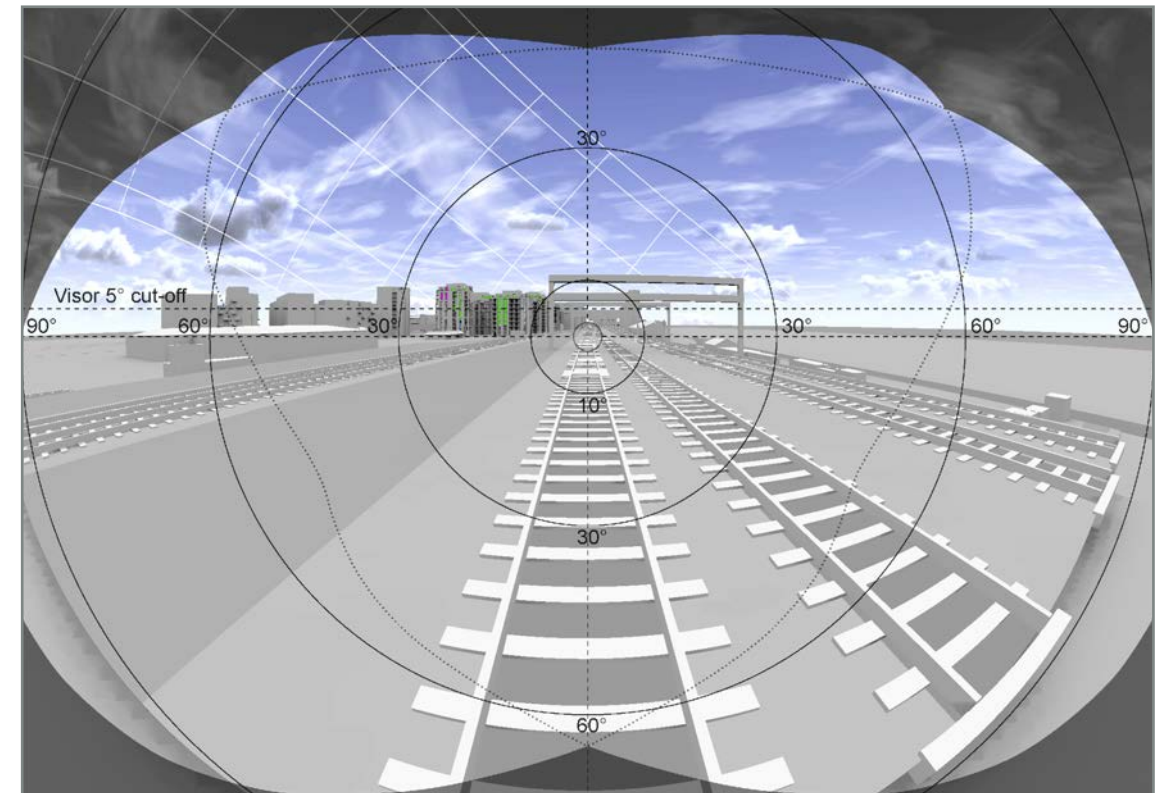
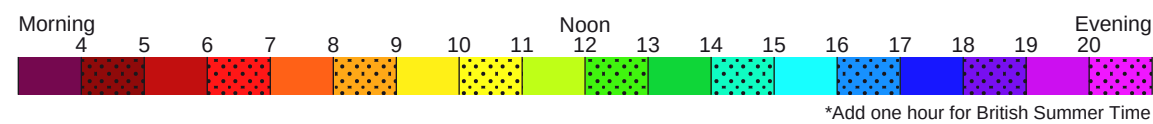
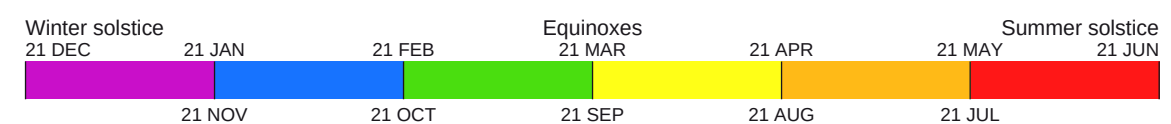


Fig. 45: Solar Glare - MONTHS - 180 degrees view



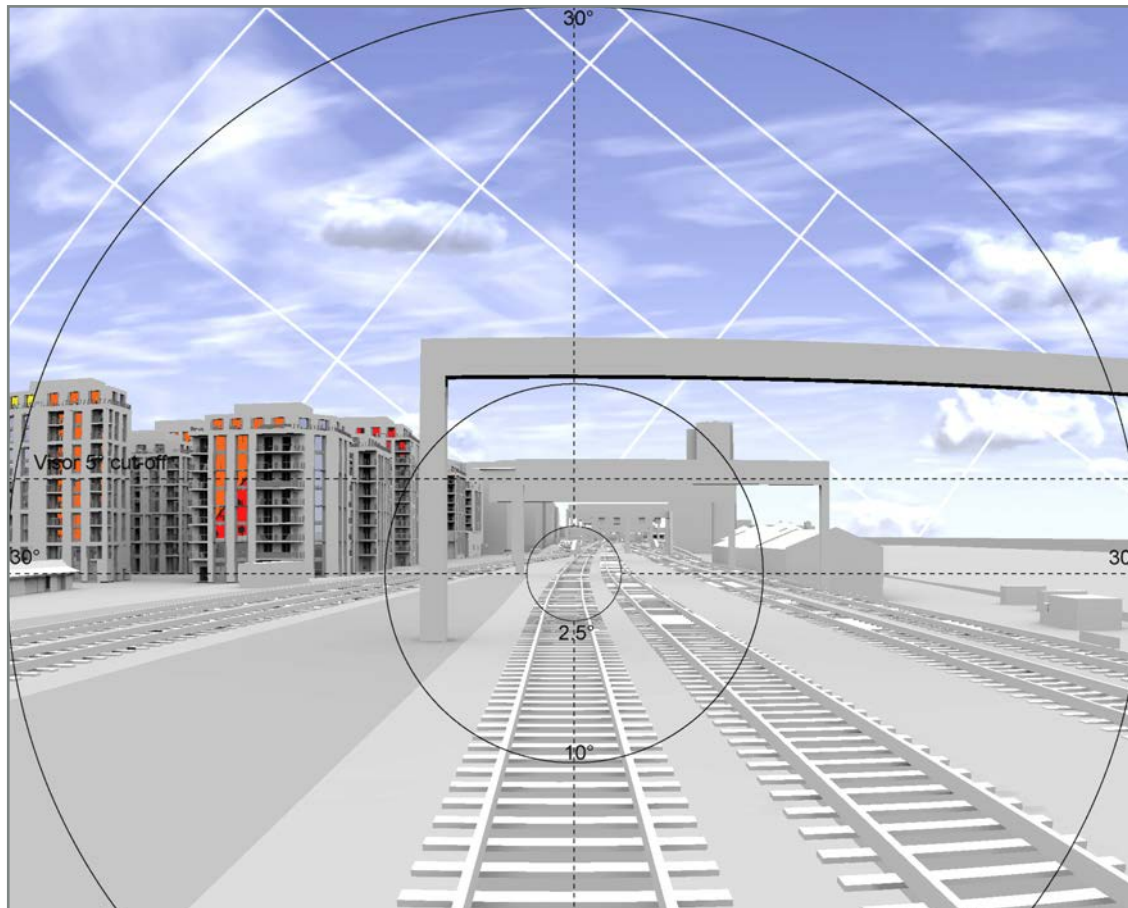


Fig. 46: Solar Glare - HOURS - Close-up

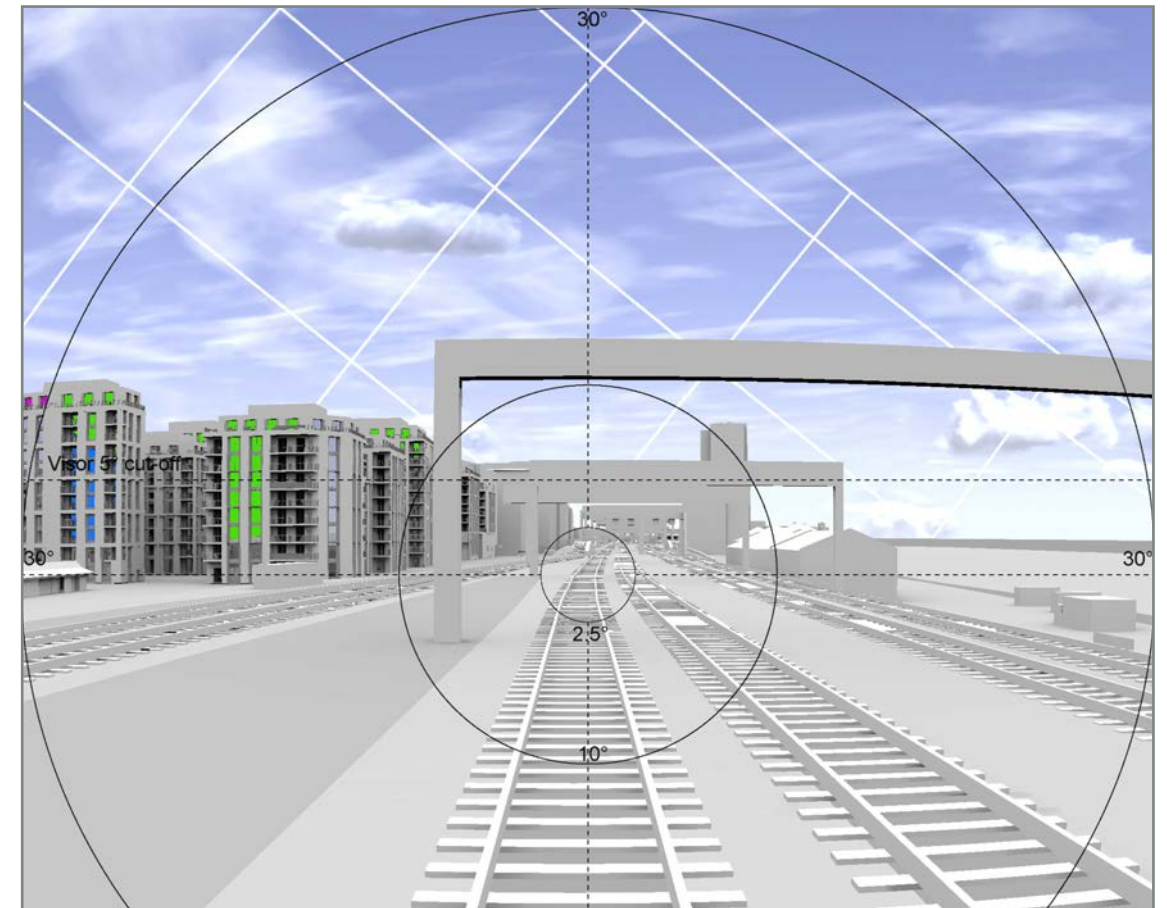


Fig. 47: Solar Glare - MONTHS - Close-up

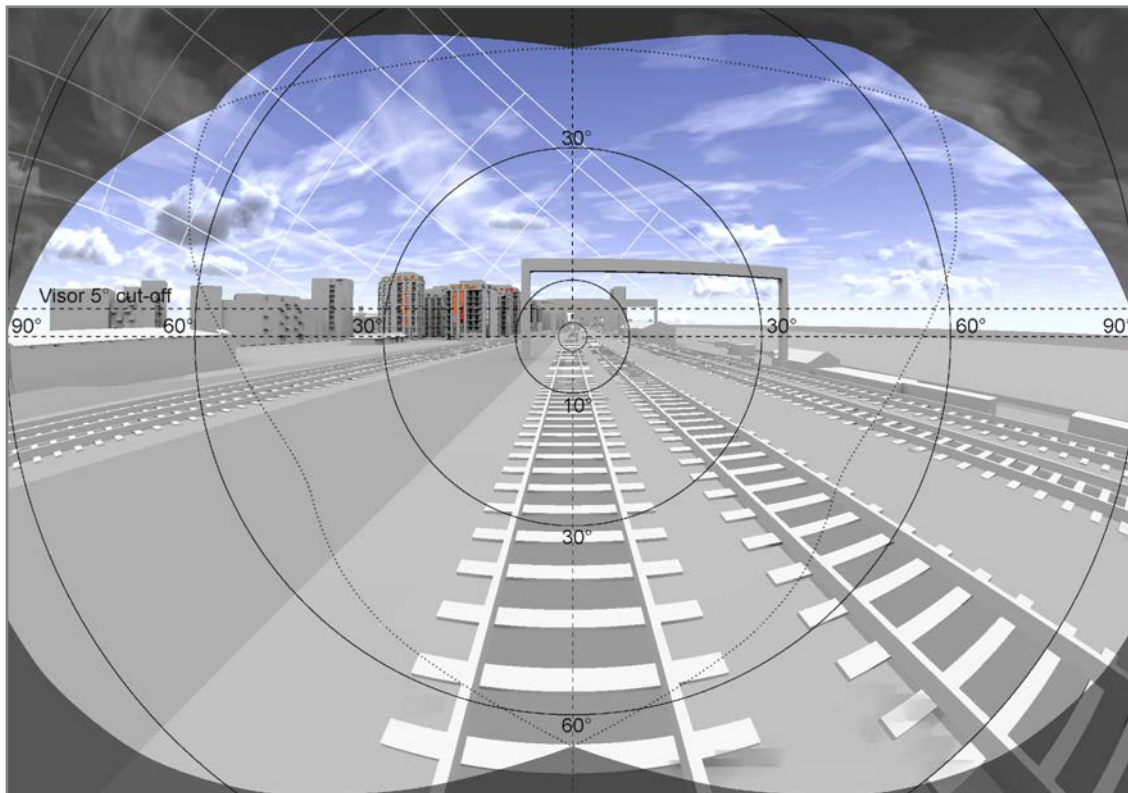


Fig. 48: Solar Glare - HOURS - 180 degrees view

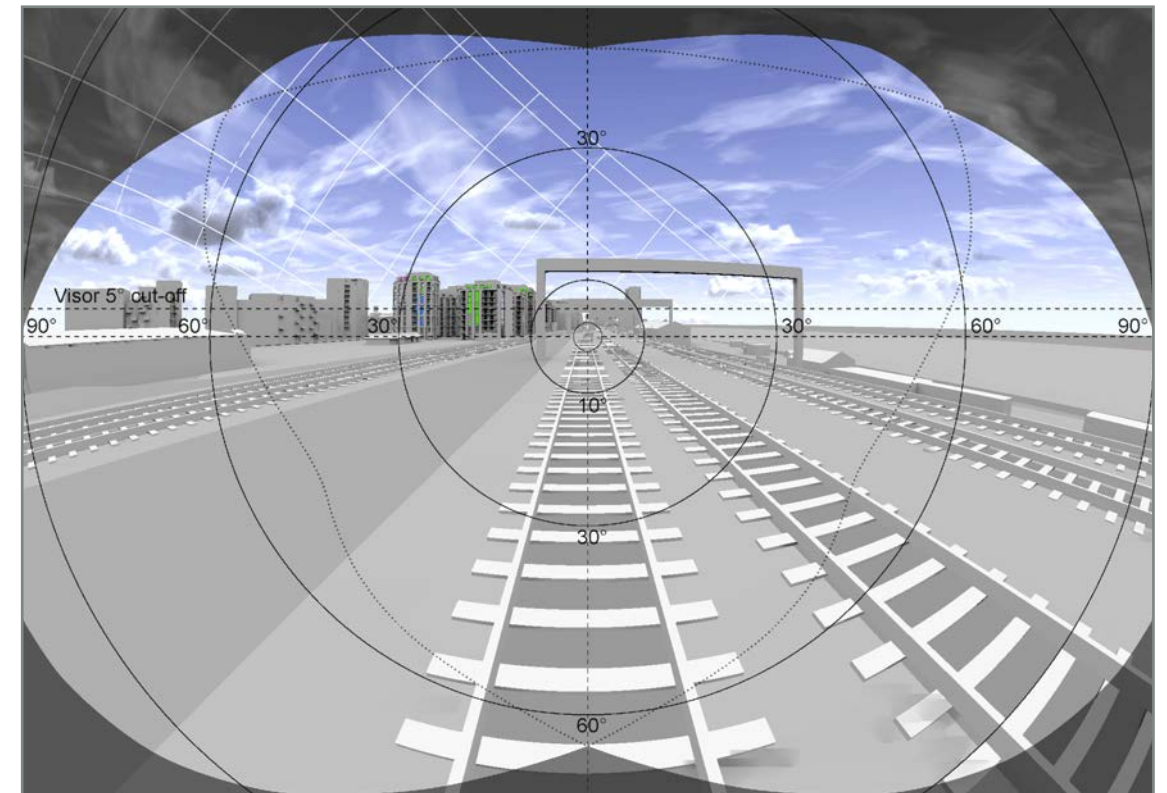
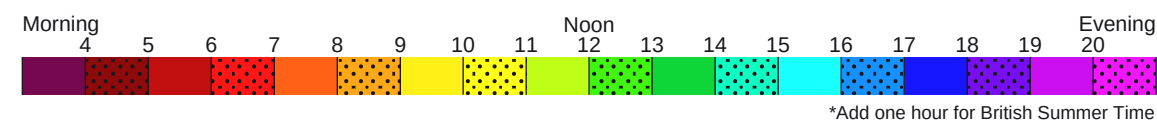
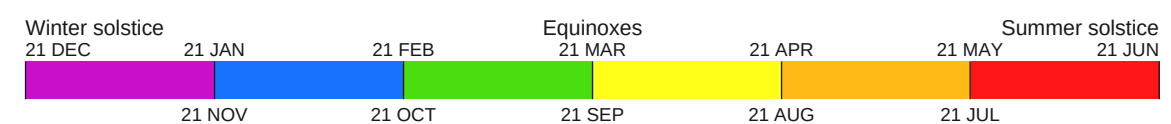


Fig. 49: Solar Glare - MONTHS - 180 degrees view



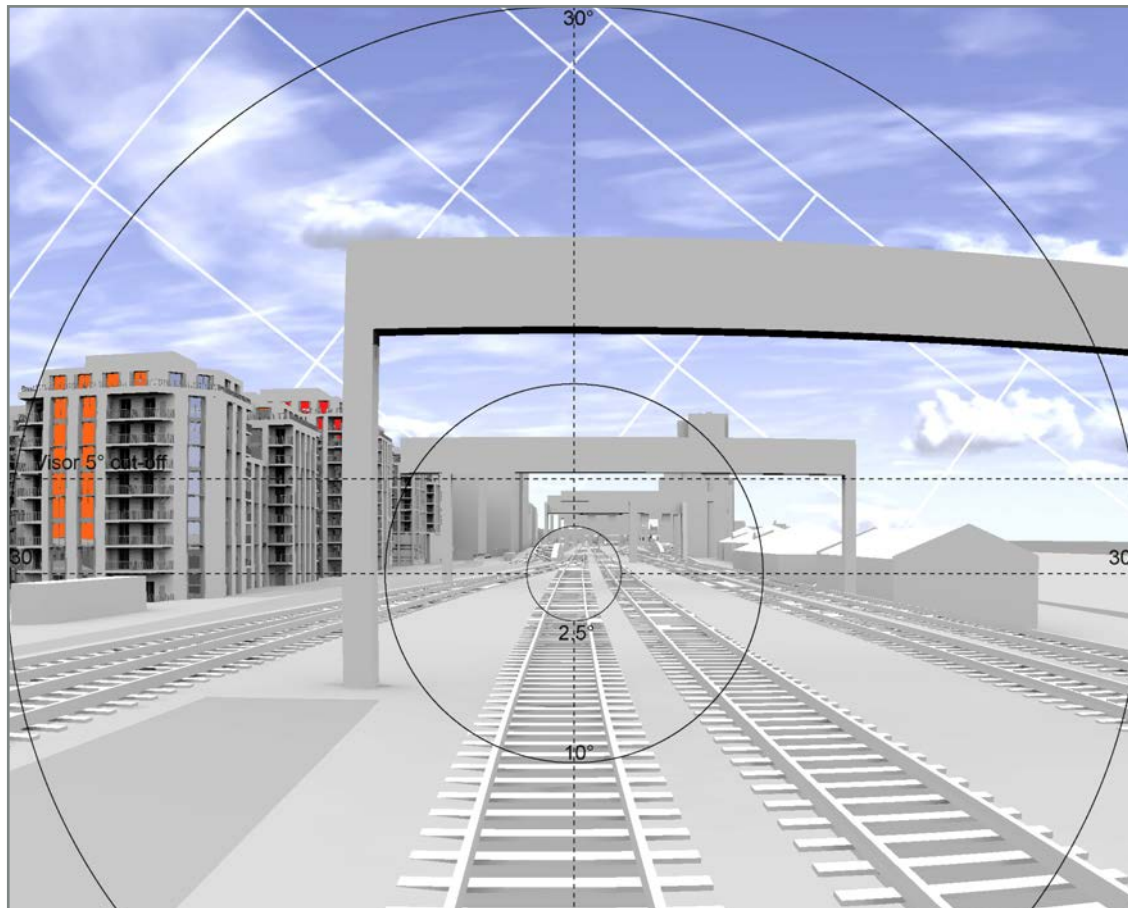


Fig. 50: Solar Glare - HOURS - Close-up

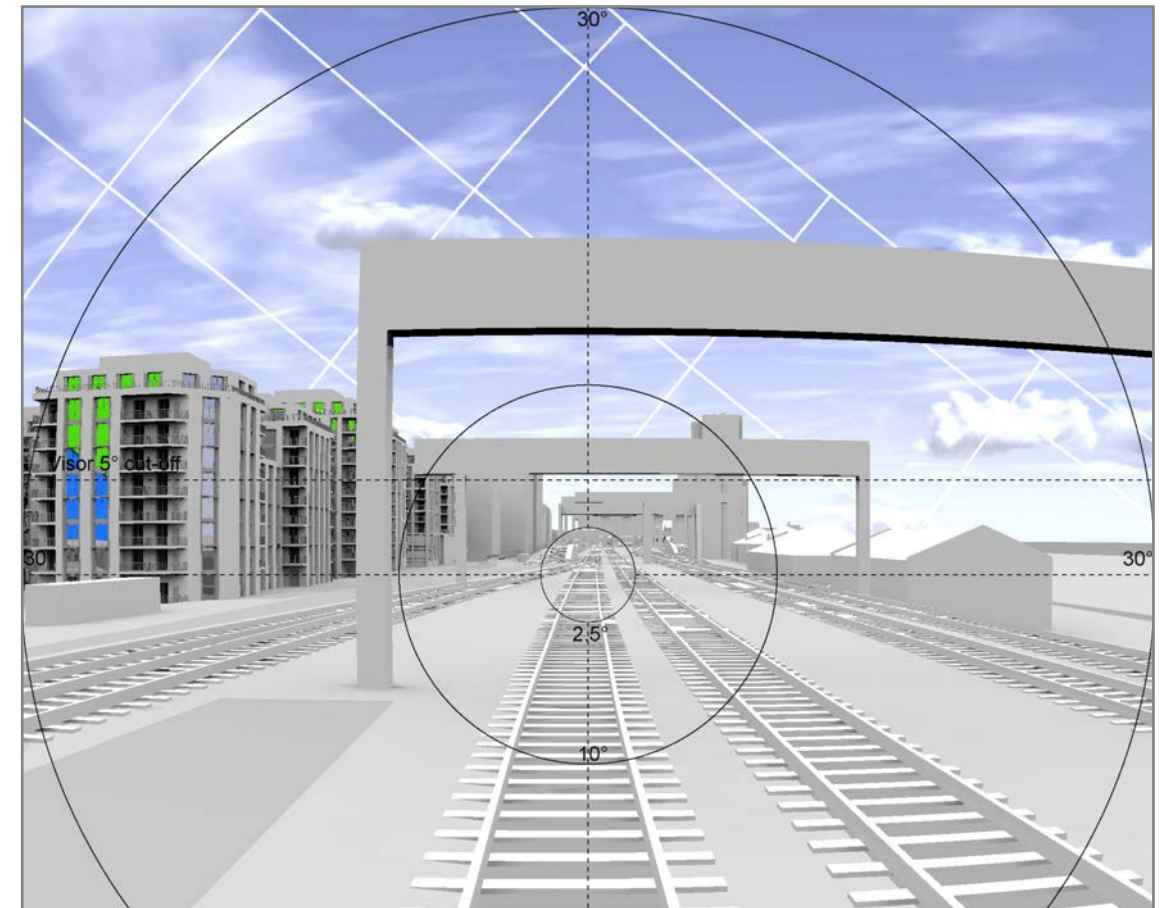


Fig. 51: Solar Glare - MONTHS - Close-up

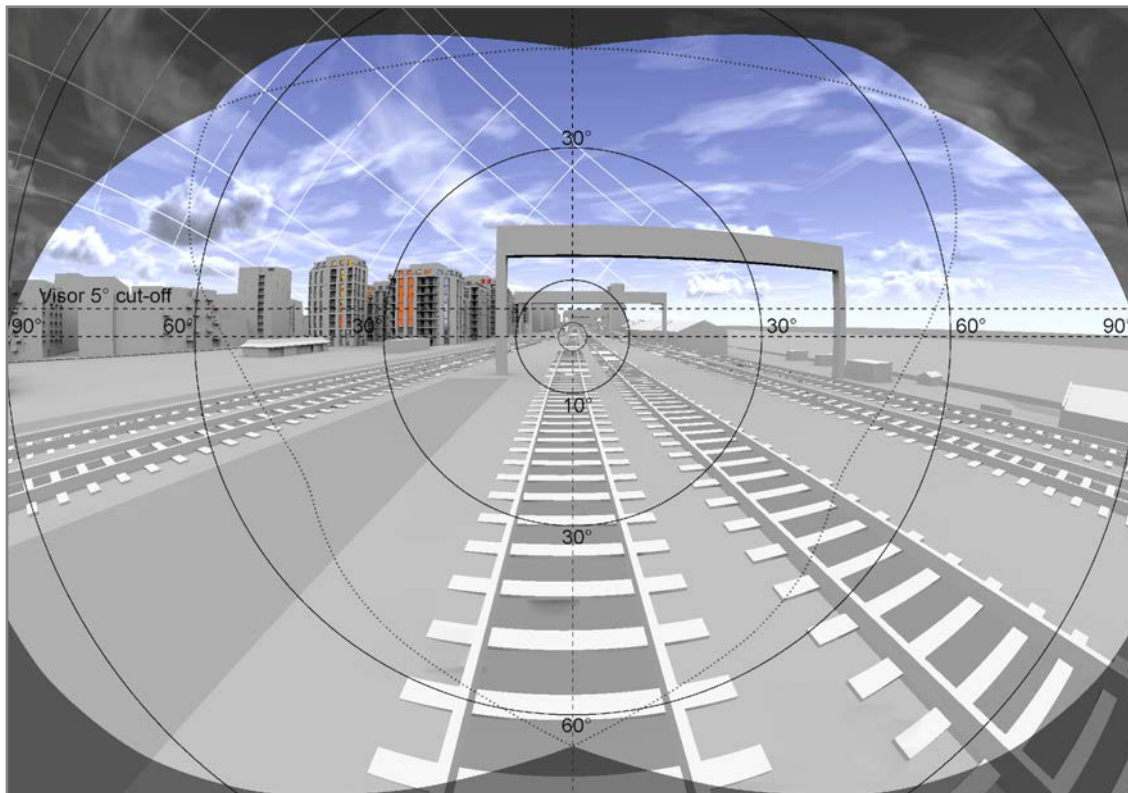


Fig. 52: Solar Glare - HOURS - 180 degrees view

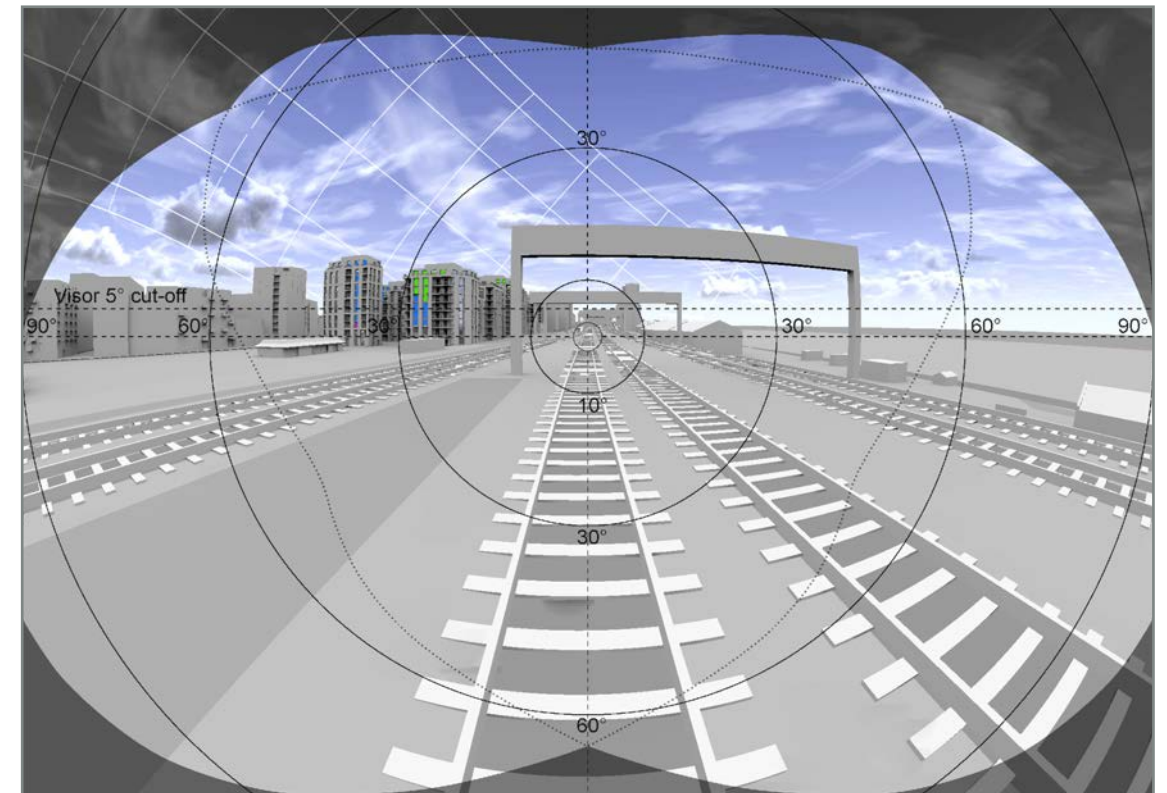
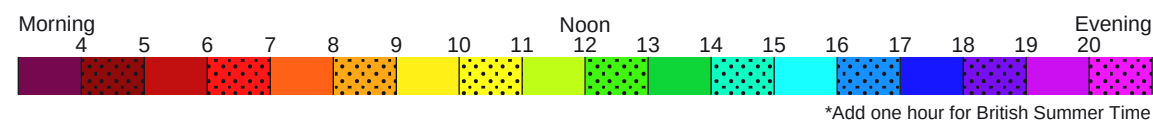
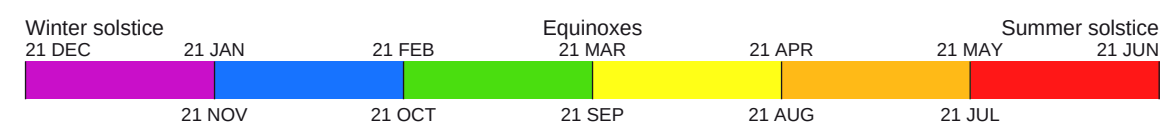


Fig. 53: Solar Glare - MONTHS - 180 degrees view



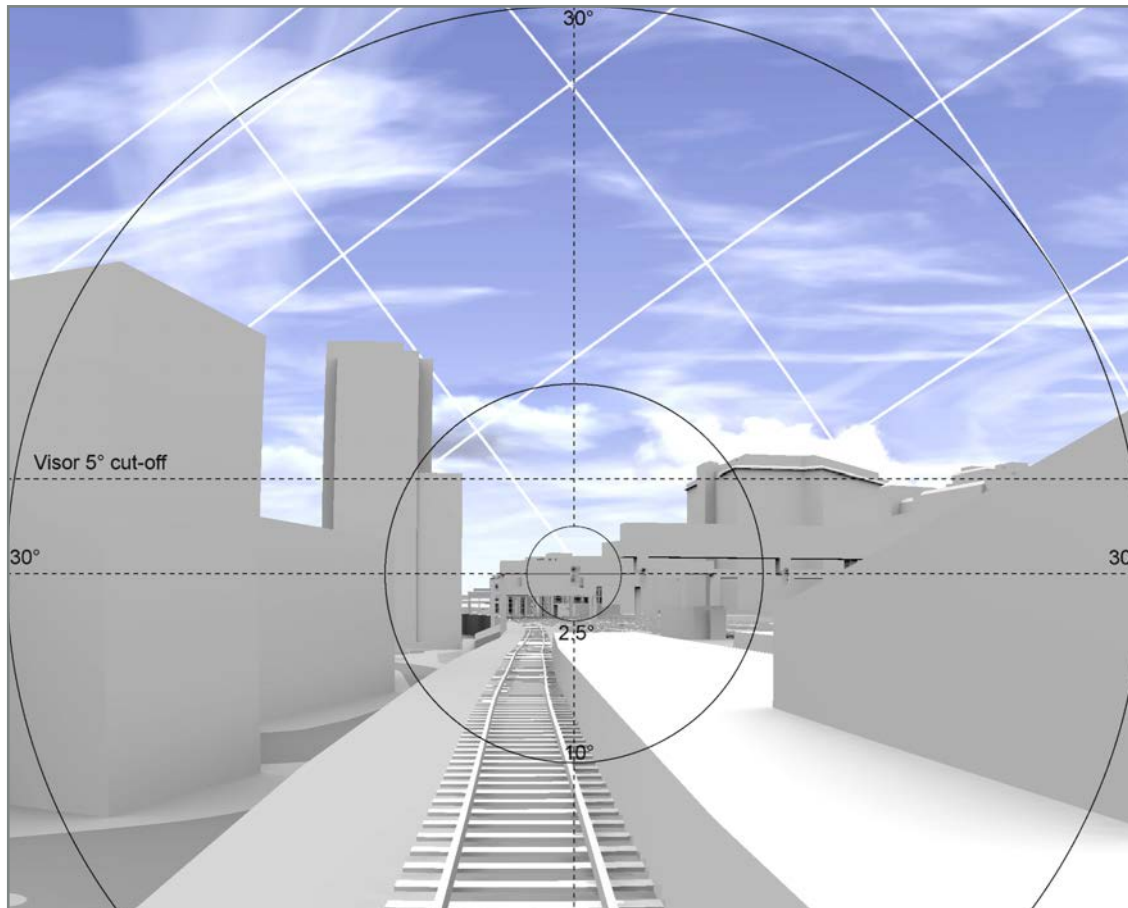


Fig. 54: Solar Glare - HOURS - Close-up

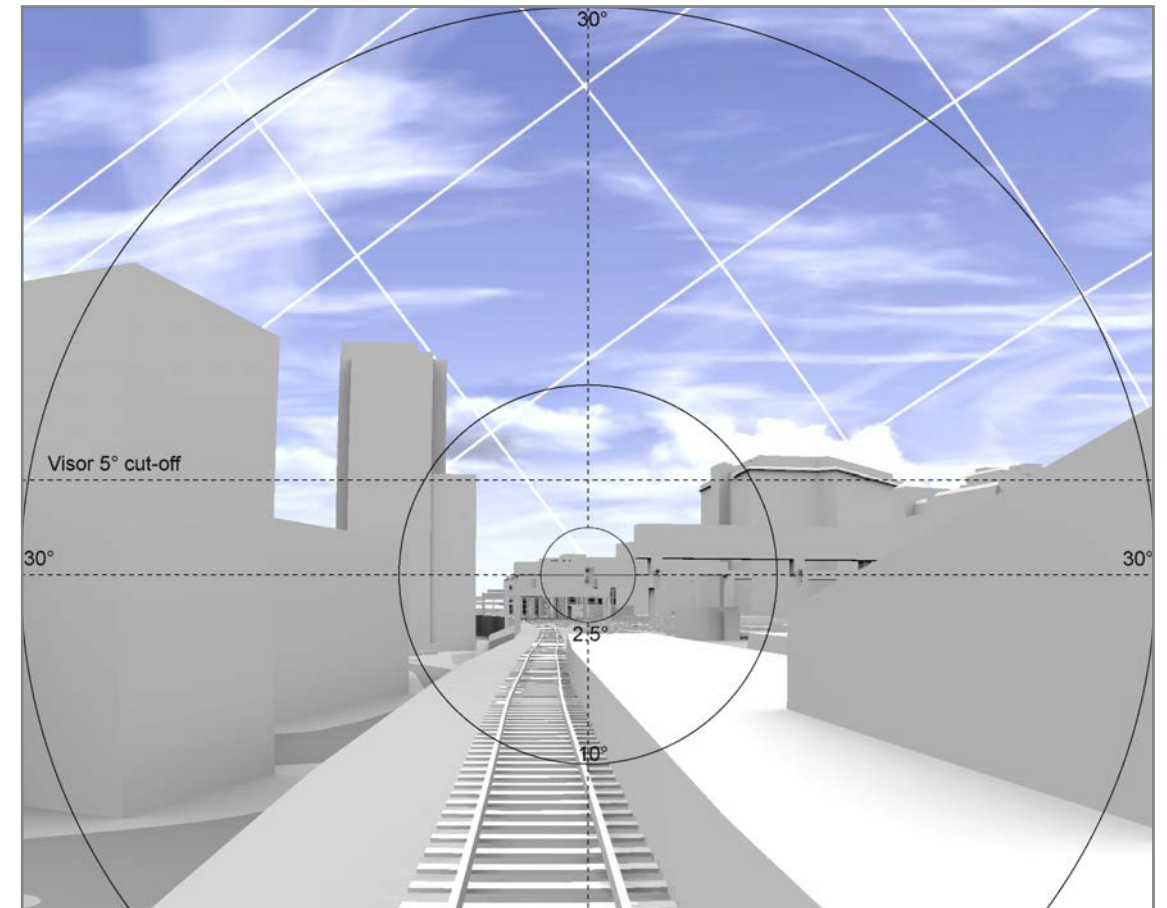


Fig. 55: Solar Glare - MONTHS - Close-up

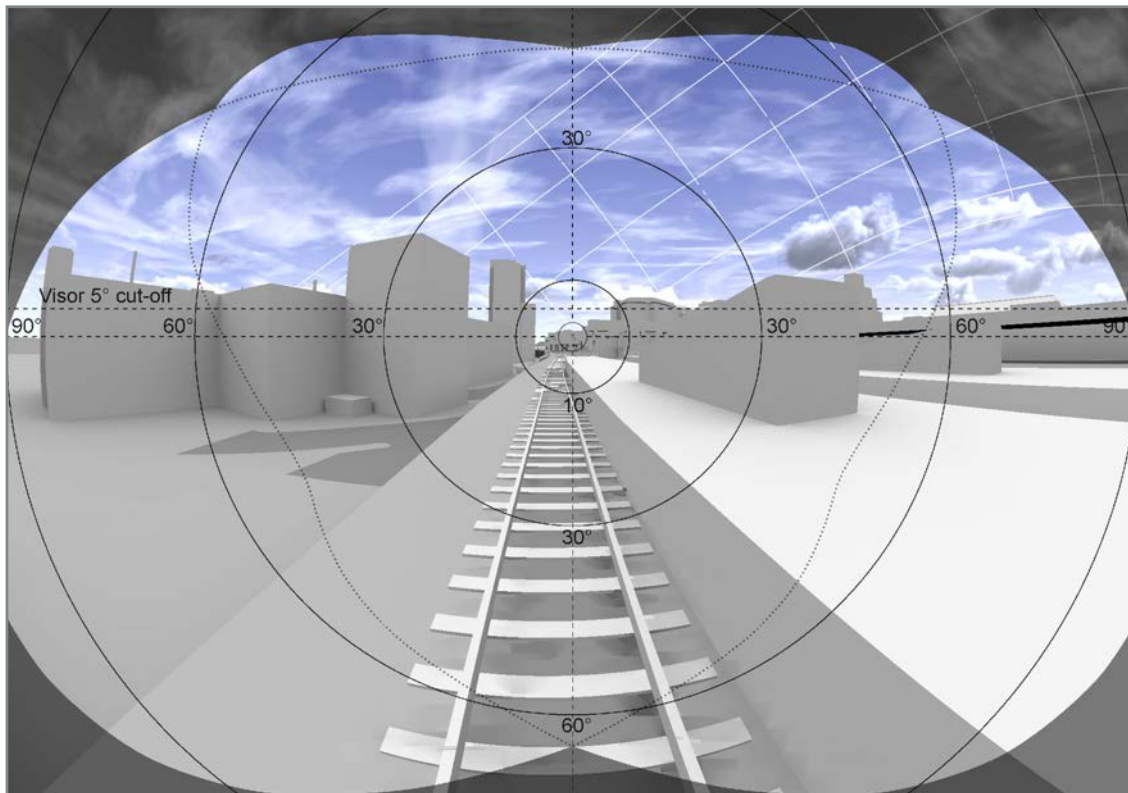


Fig. 56: Solar Glare - HOURS - 180 degrees view

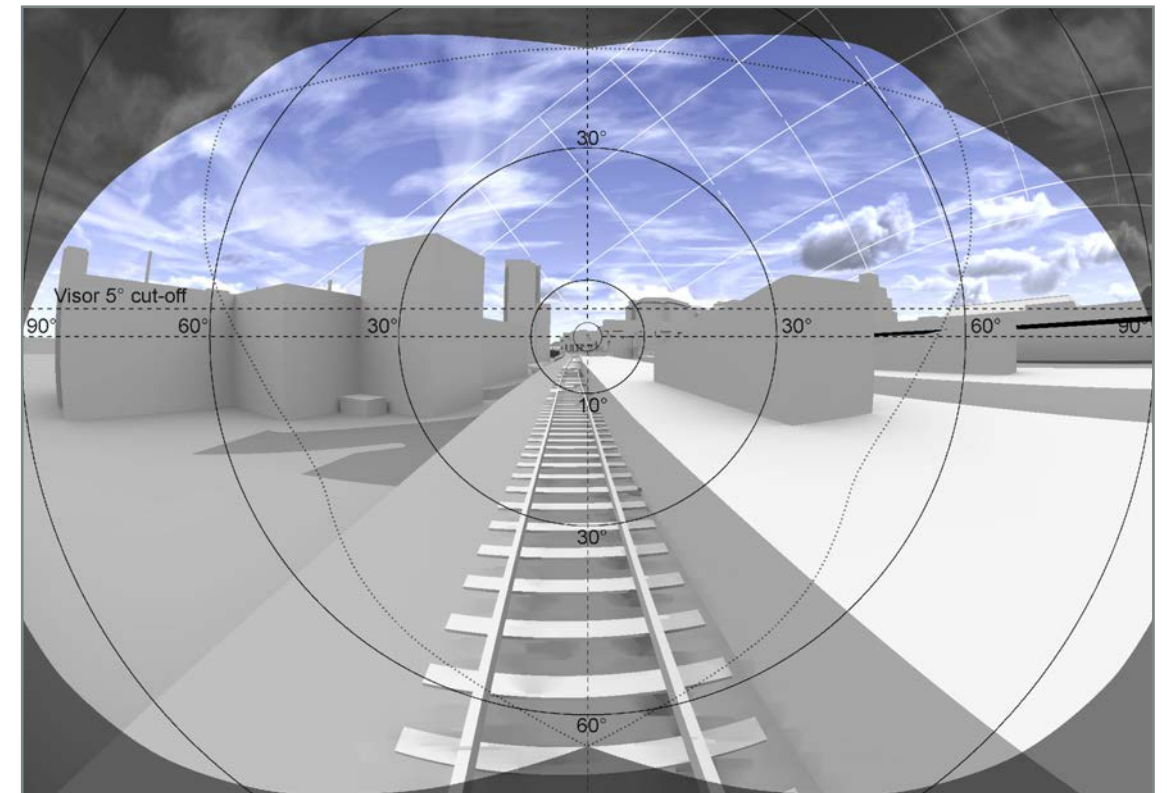
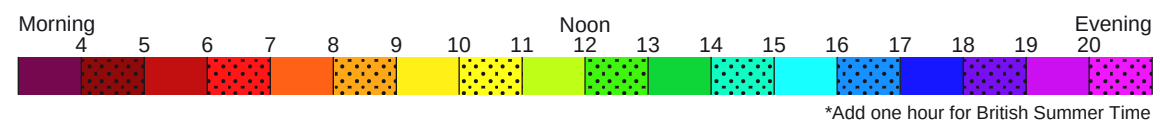
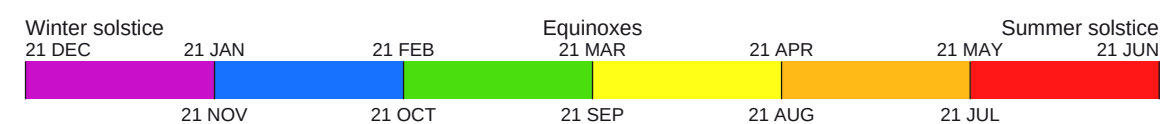


Fig. 57: Solar Glare - MONTHS - 180 degrees view



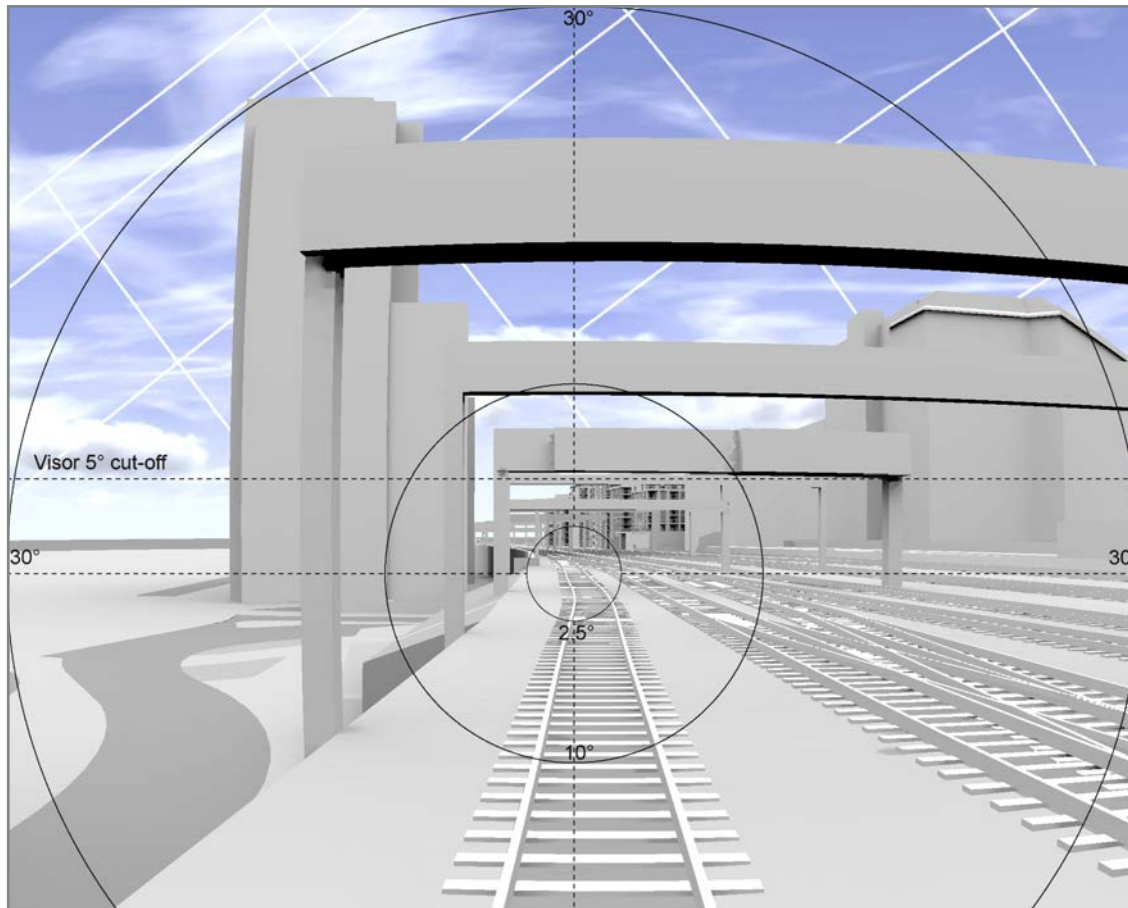


Fig. 58: Solar Glare - HOURS - Close-up

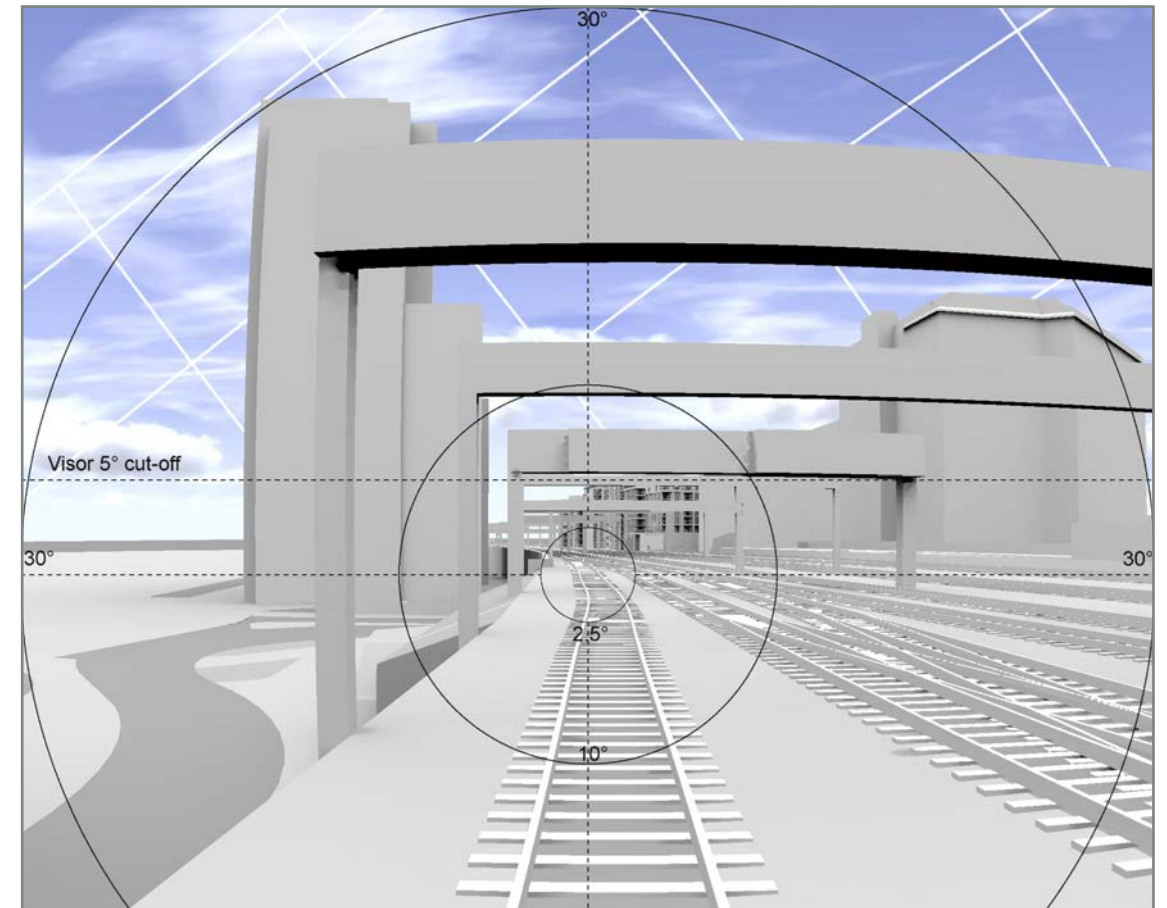


Fig. 59: Solar Glare - MONTHS - Close-up

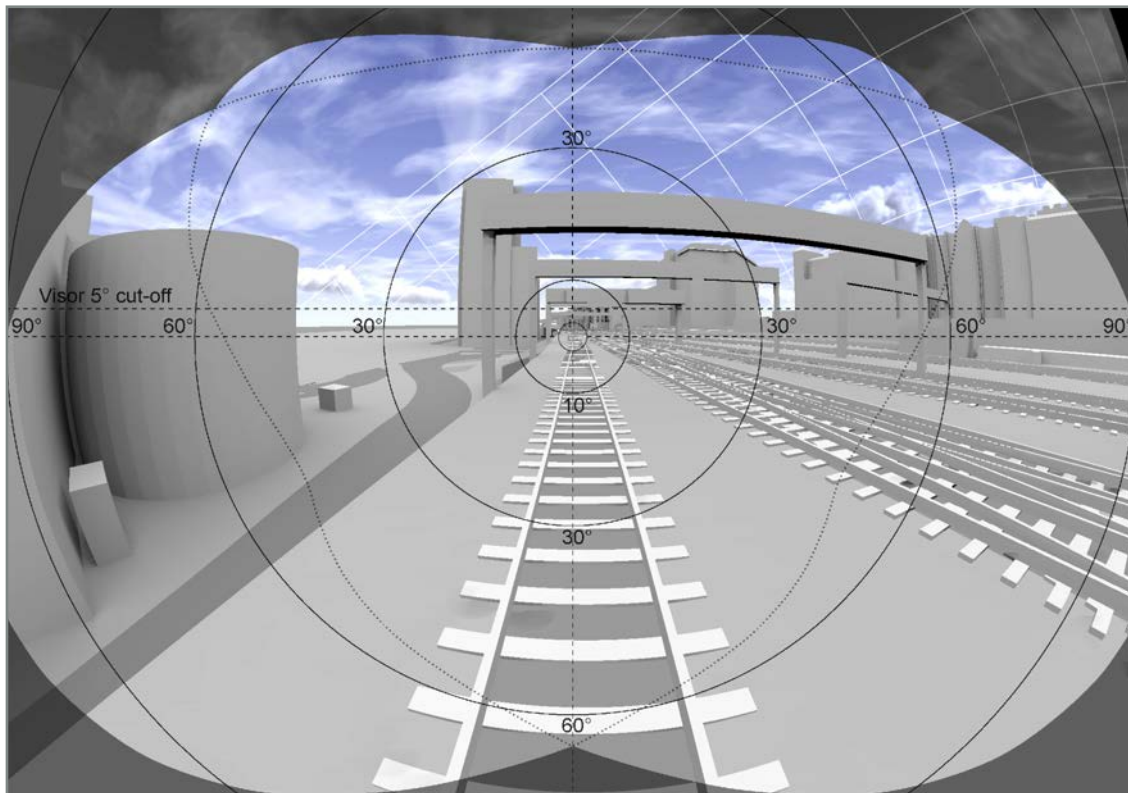


Fig. 60: Solar Glare - HOURS - 180 degrees view

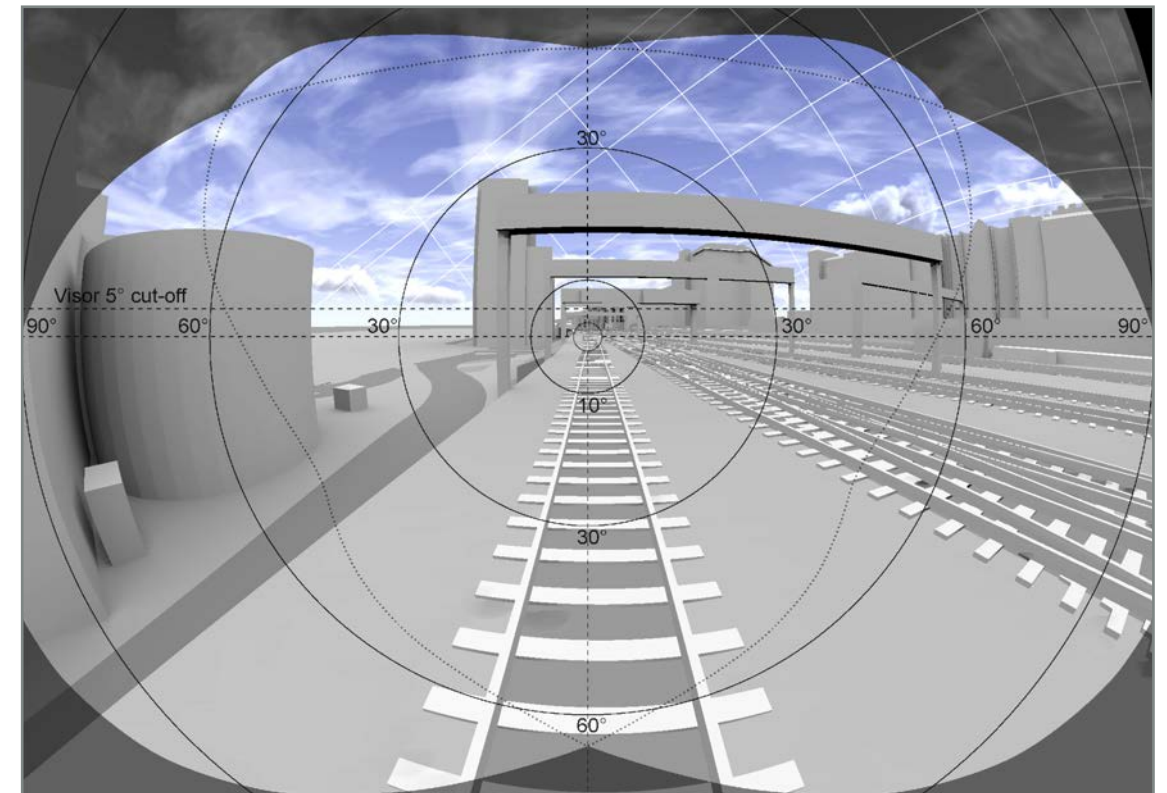
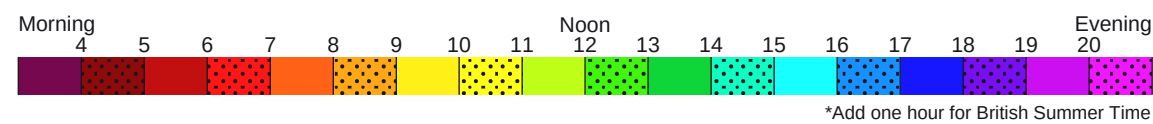
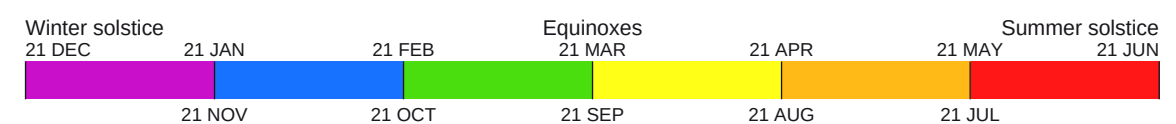


Fig. 61: Solar Glare - MONTHS - 180 degrees view



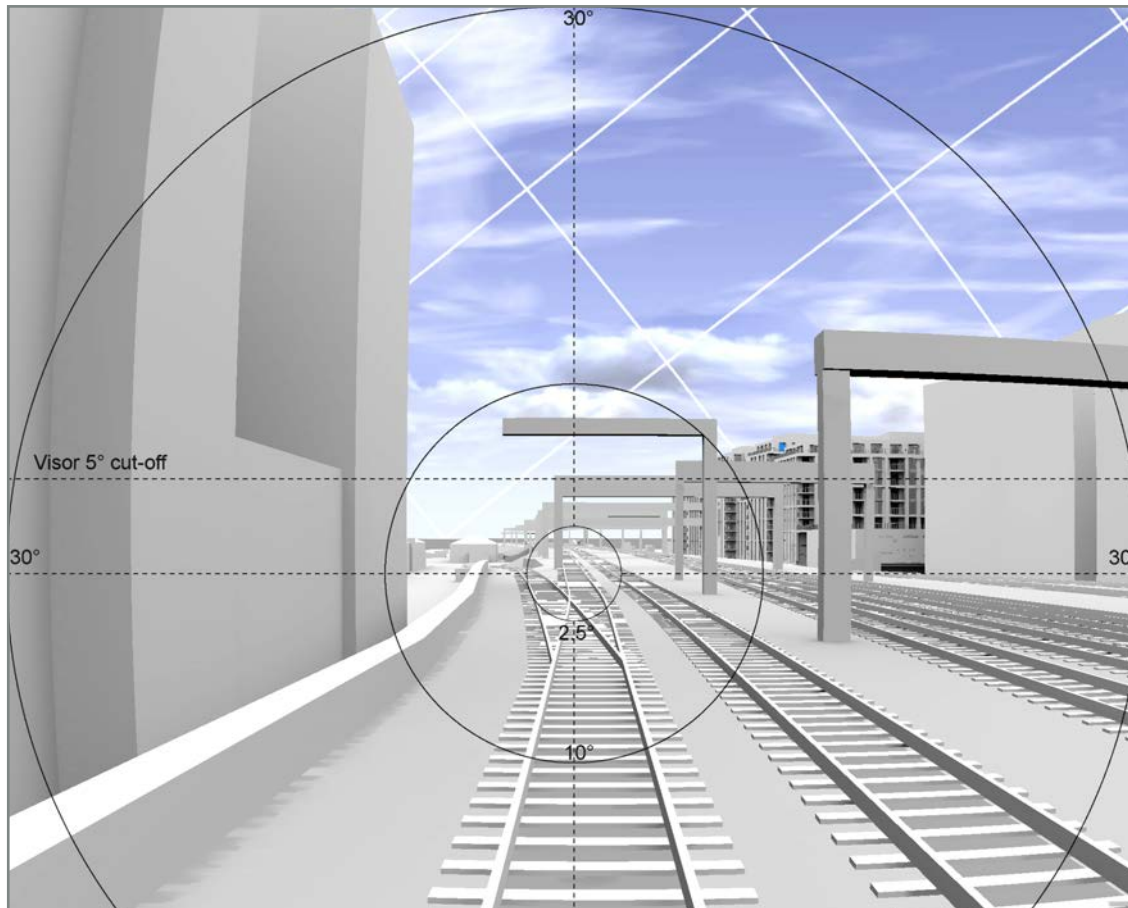


Fig. 62: Solar Glare - HOURS - Close-up

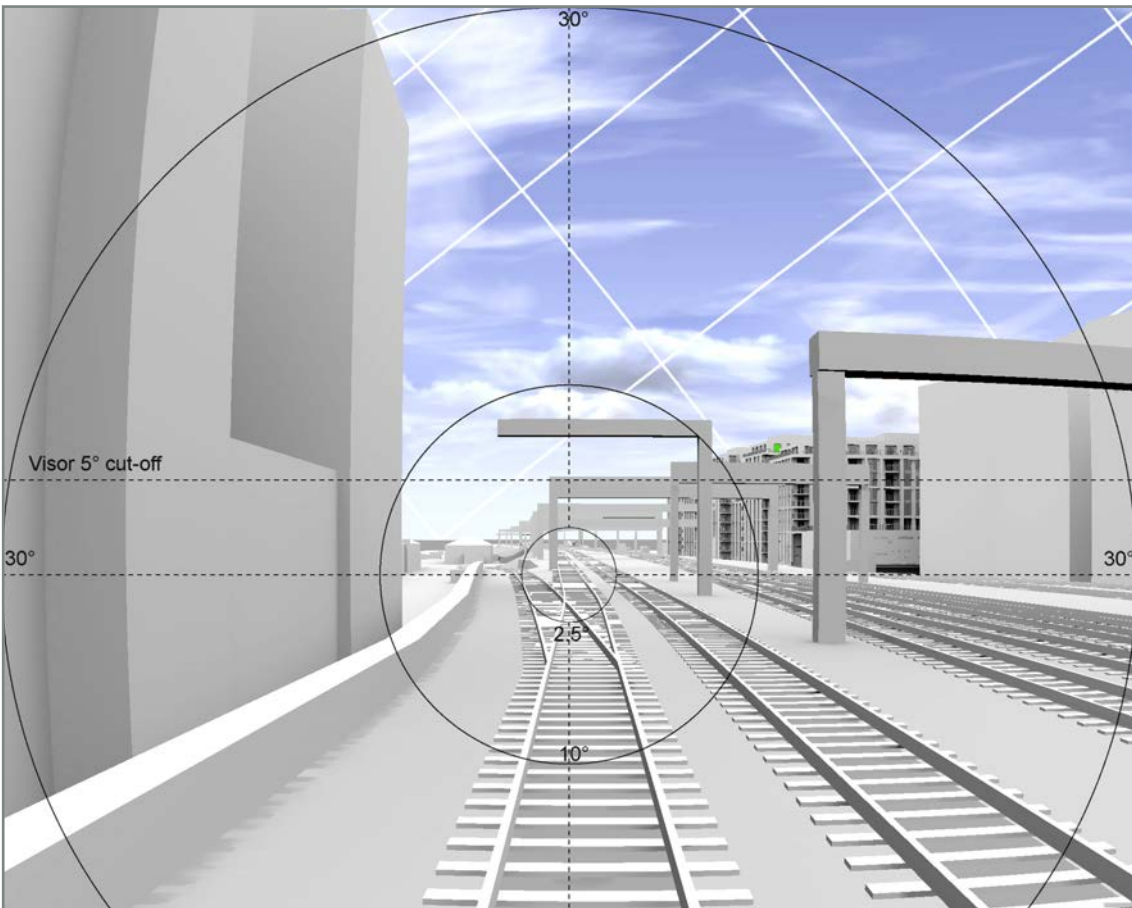


Fig. 63: Solar Glare - MONTHS - Close-up

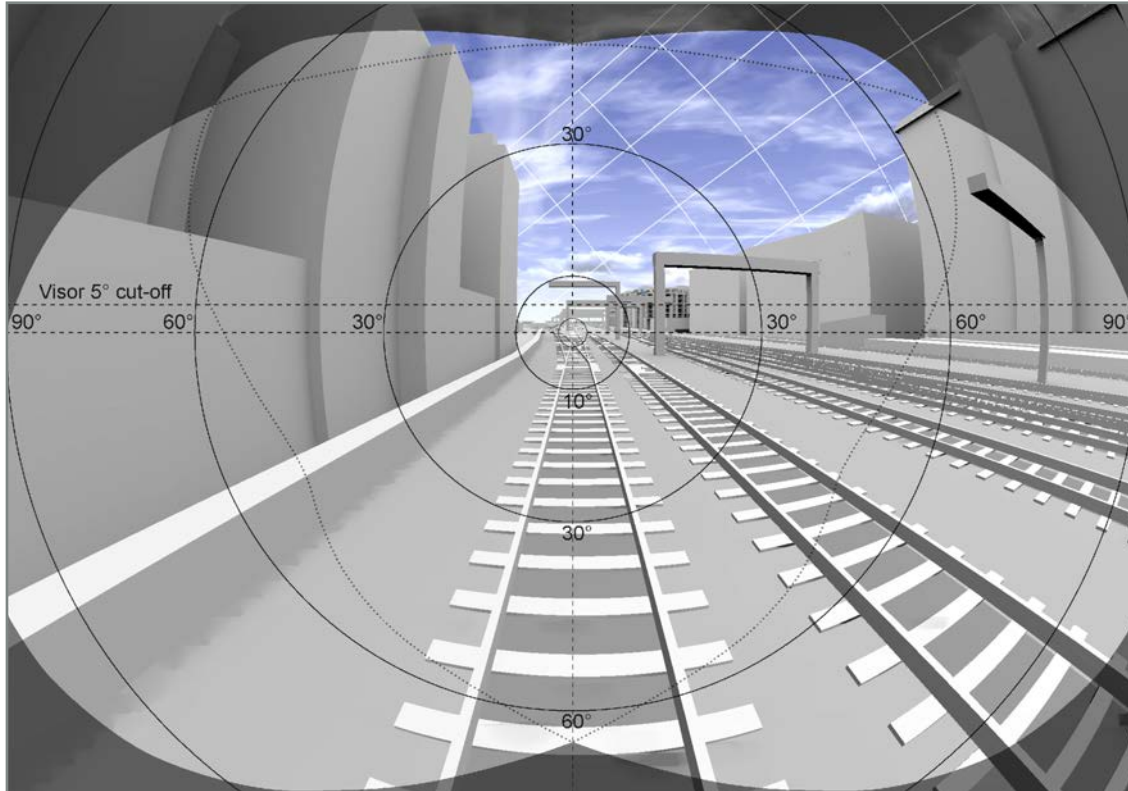


Fig. 64: Solar Glare - HOURS - 180 degrees view

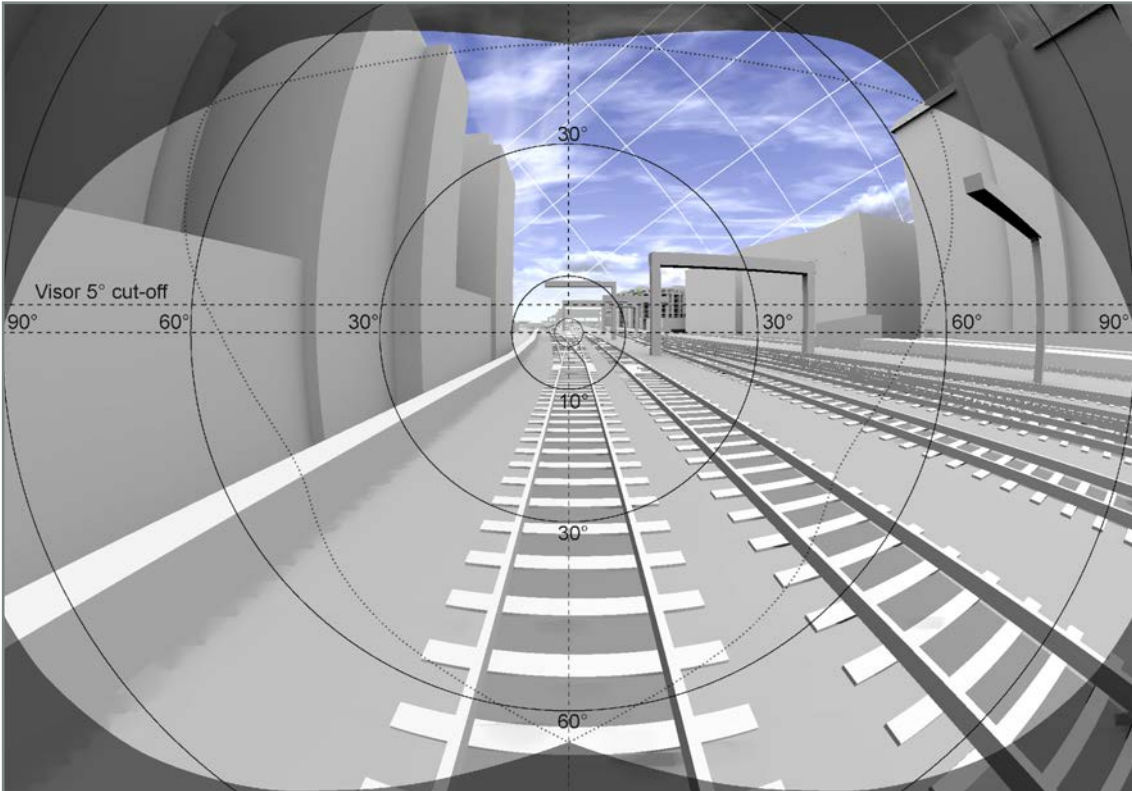
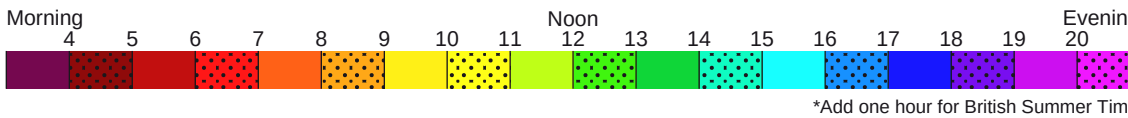
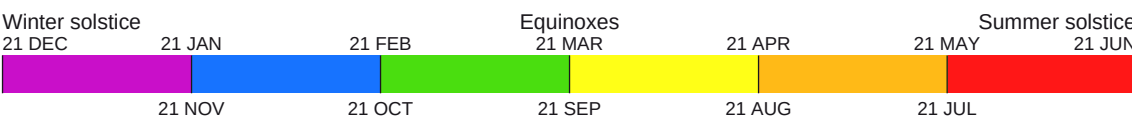


Fig. 65: Solar Glare - MONTHS - 180 degrees view



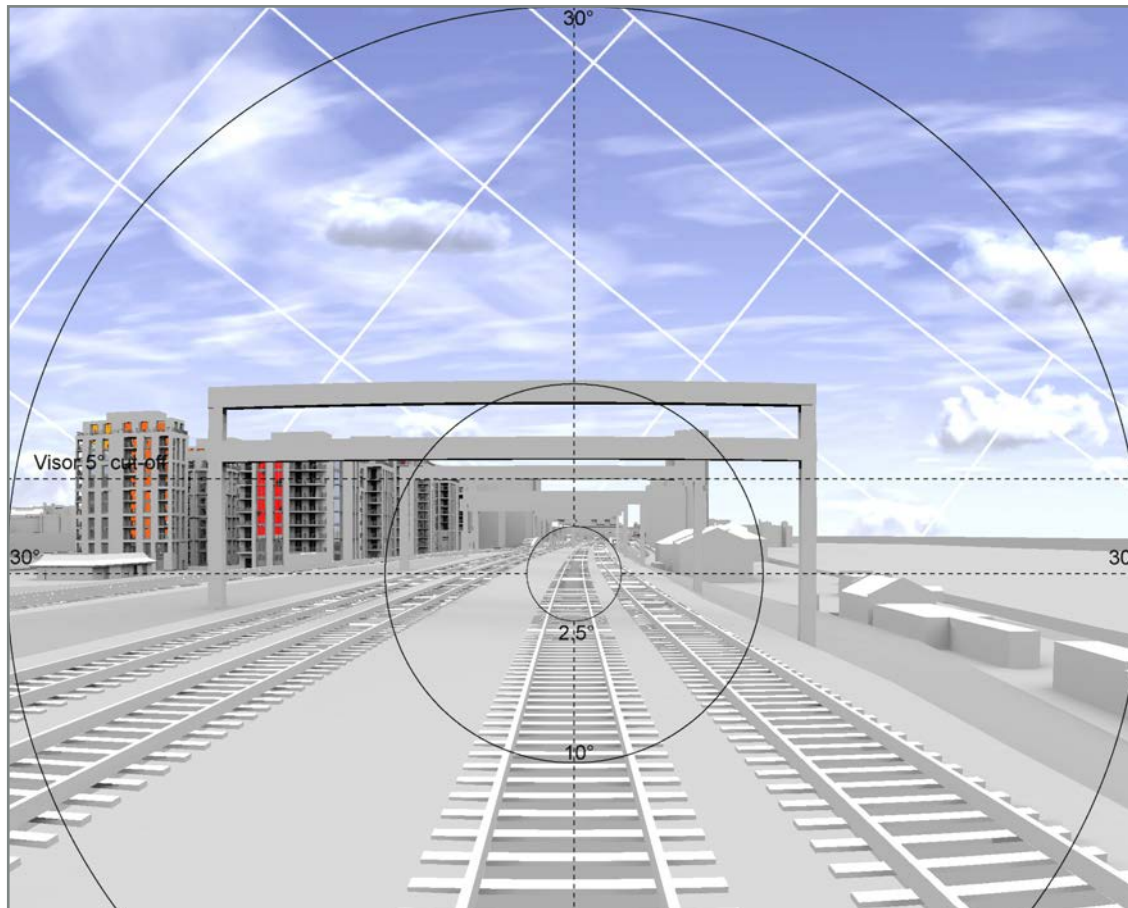


Fig. 66: Solar Glare - HOURS - Close-up

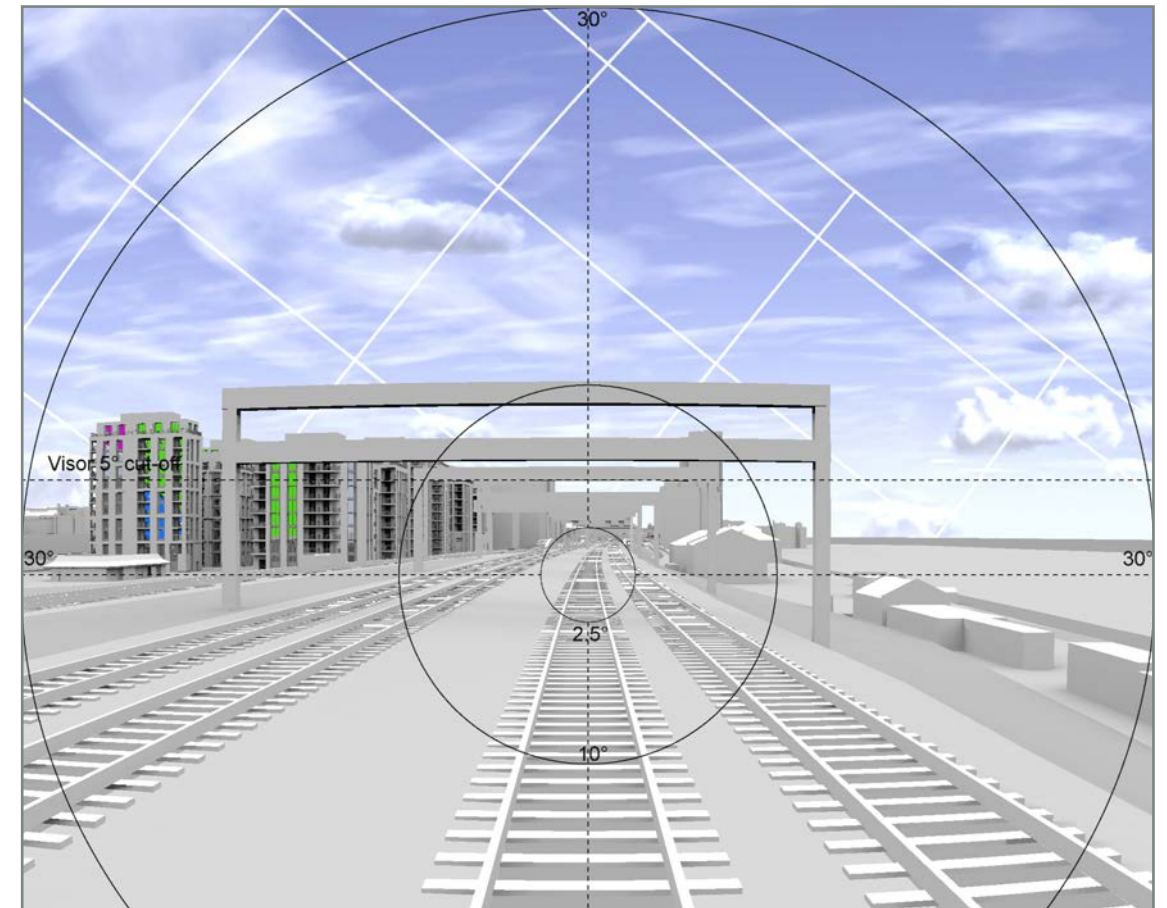


Fig. 67: Solar Glare - MONTHS - Close-up

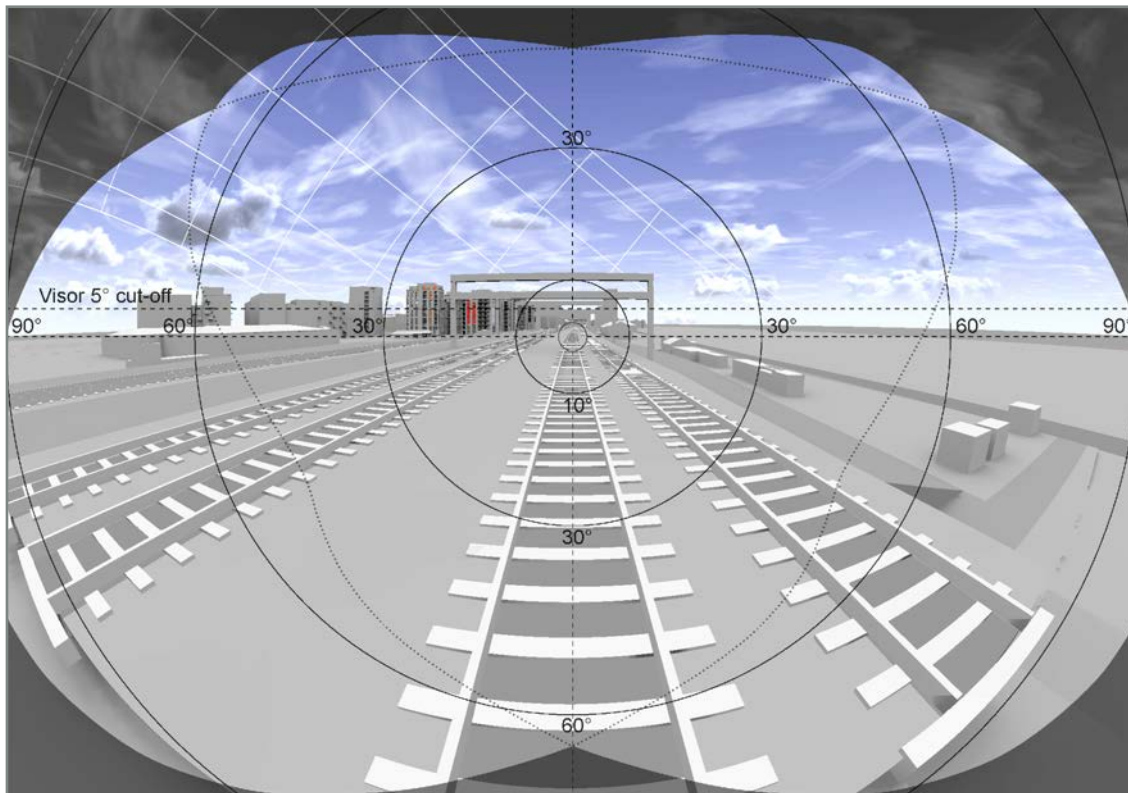


Fig. 68: Solar Glare - HOURS - 180 degrees view

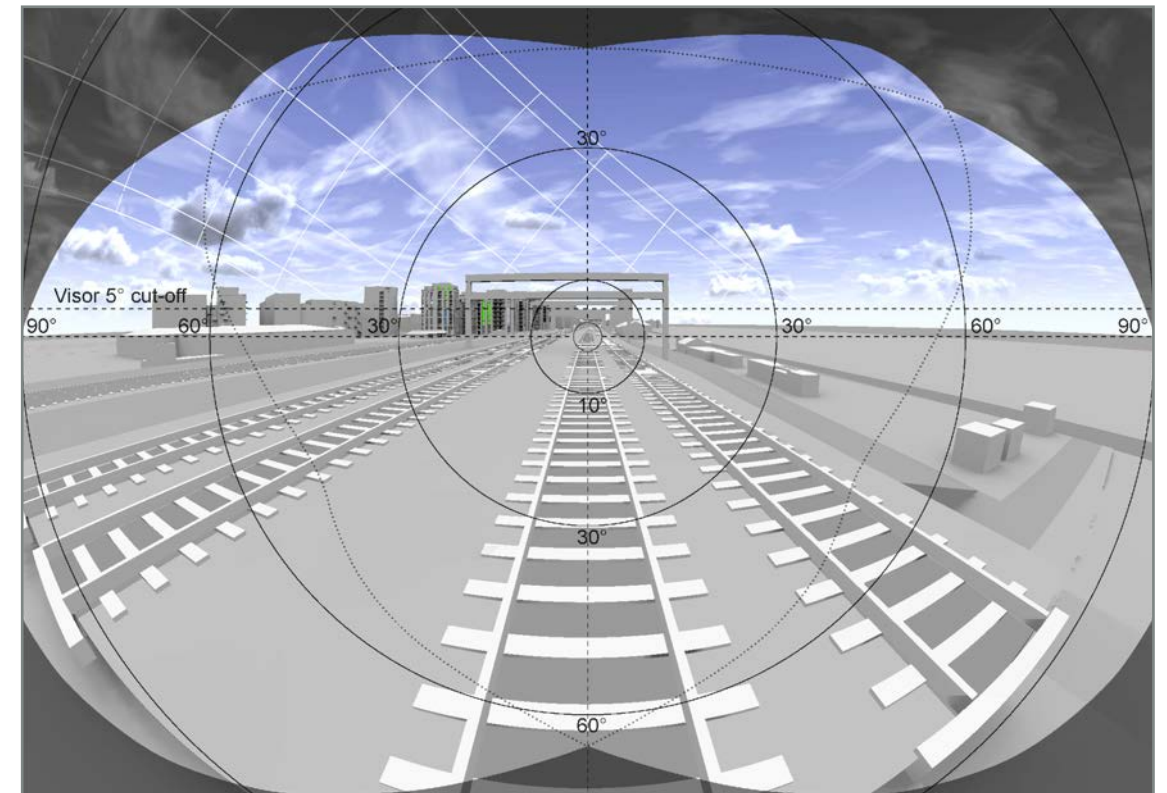
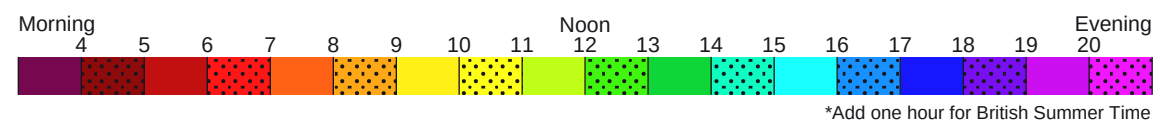
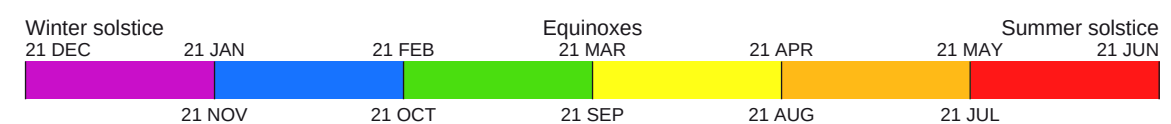


Fig. 69: Solar Glare - MONTHS - 180 degrees view



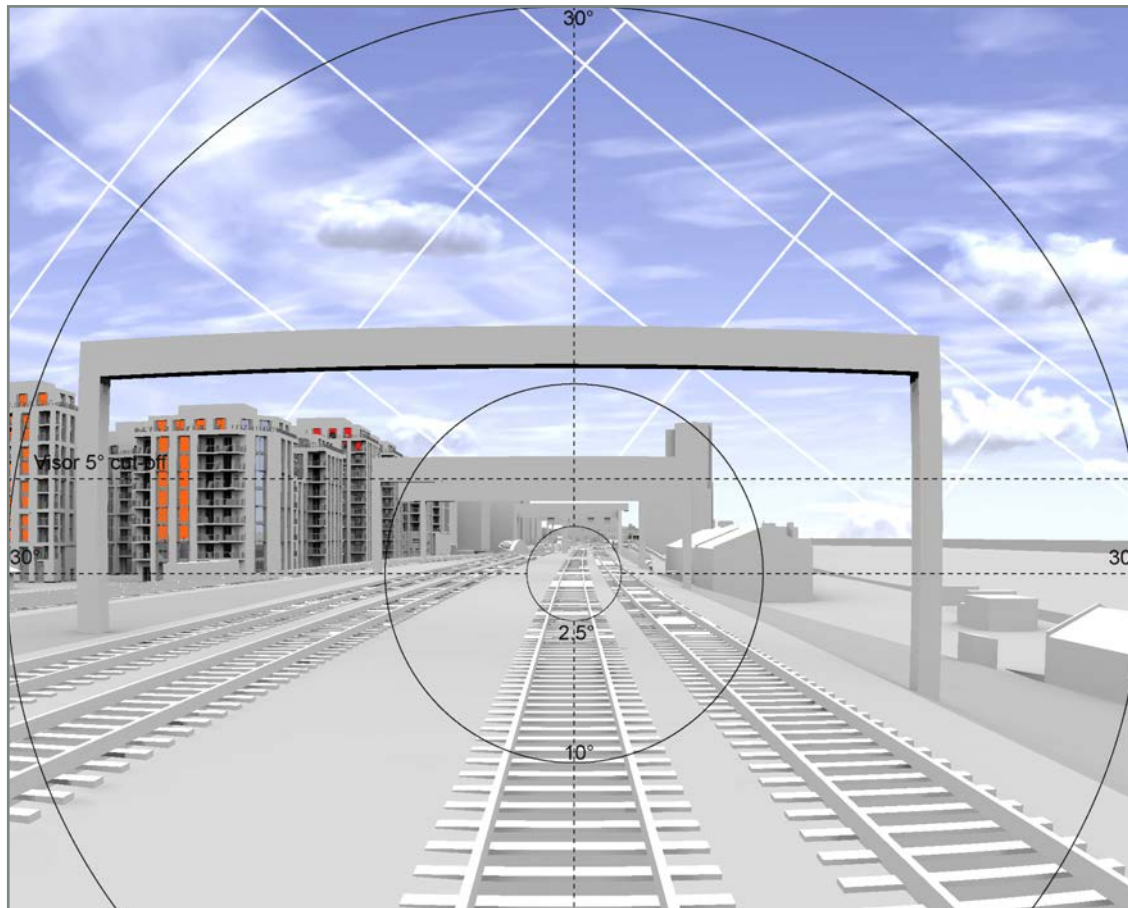


Fig. 70: Solar Glare - HOURS - Close-up

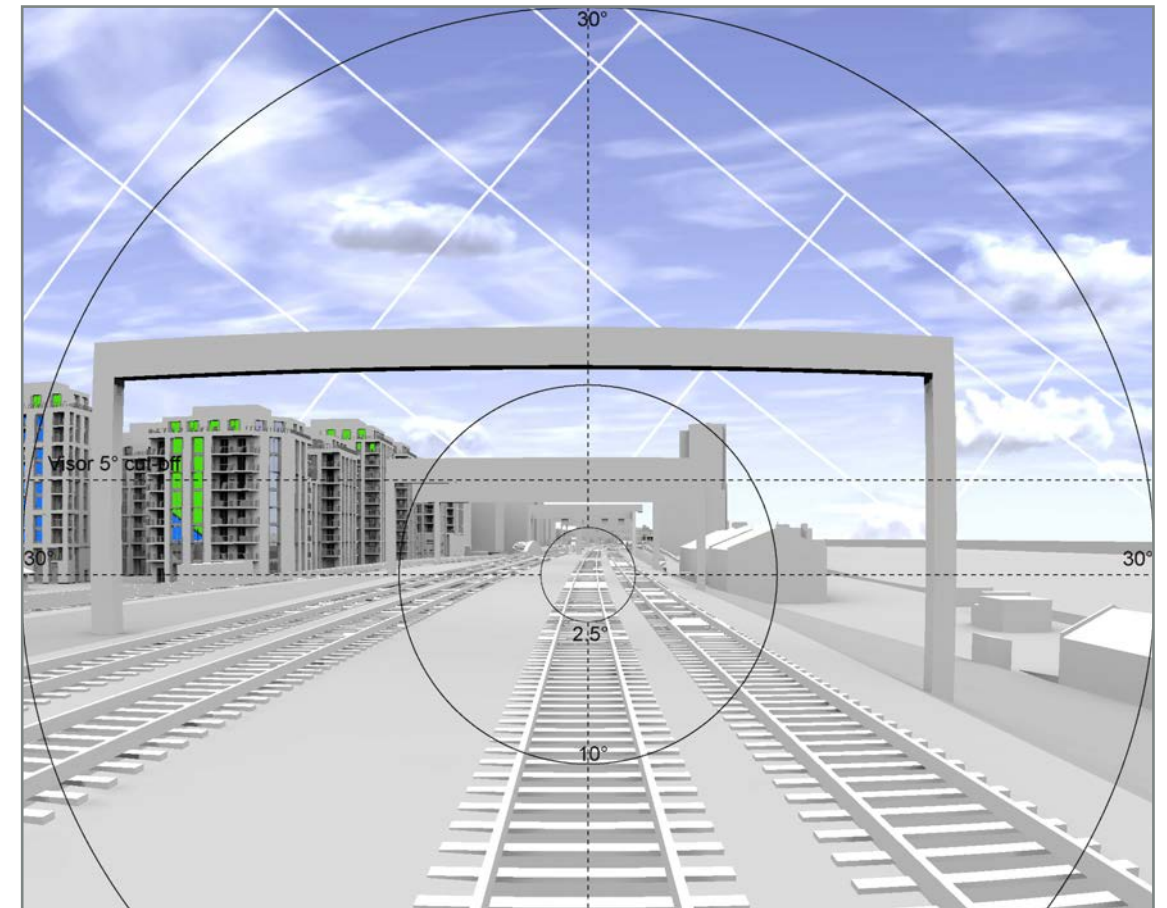


Fig. 71: Solar Glare - MONTHS - Close-up

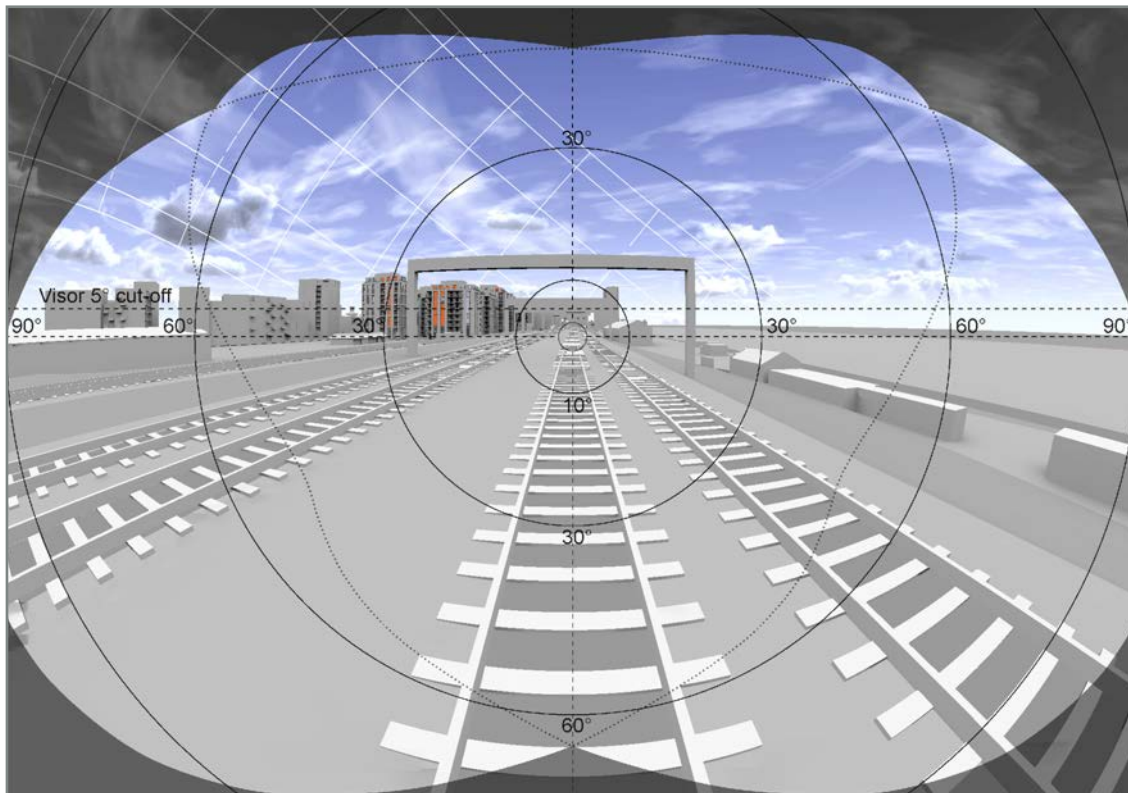


Fig. 72: Solar Glare - HOURS - 180 degrees view

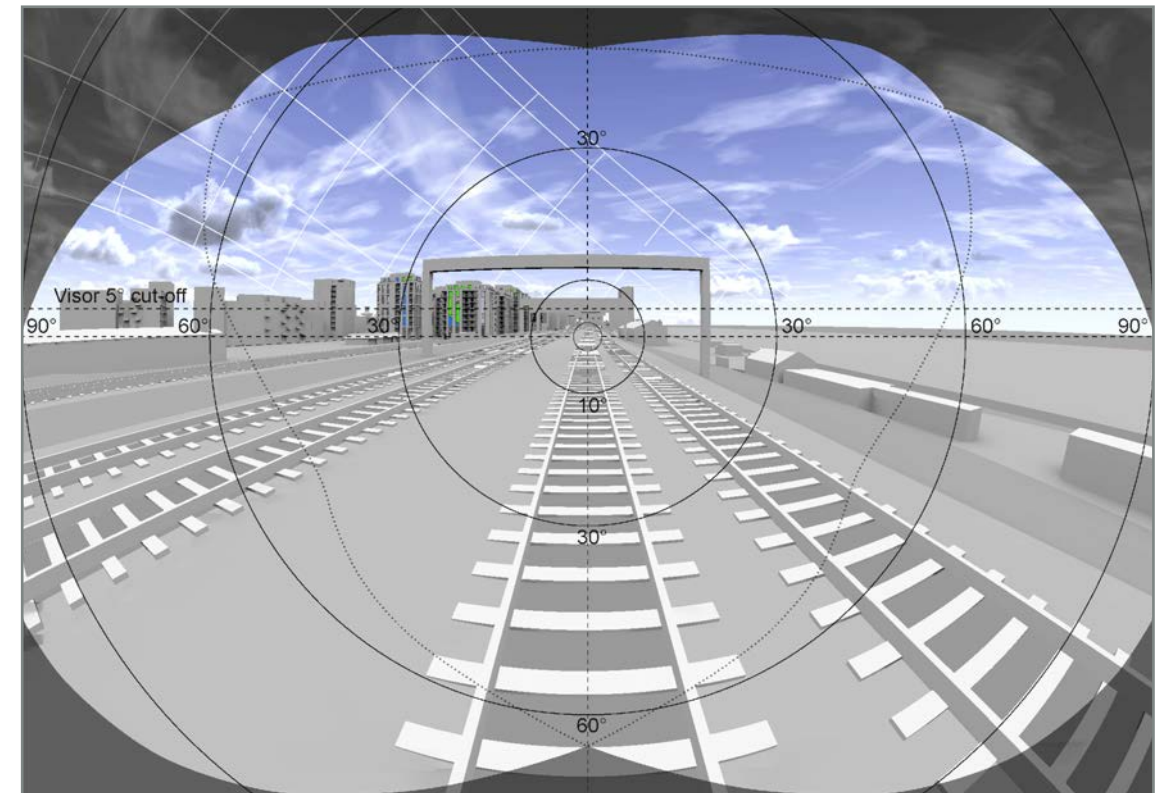
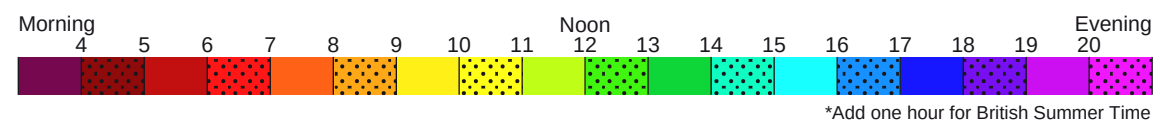
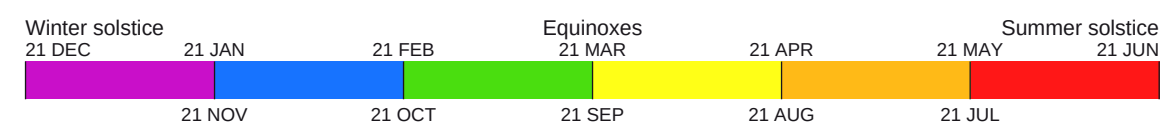


Fig. 73: Solar Glare - MONTHS - 180 degrees view



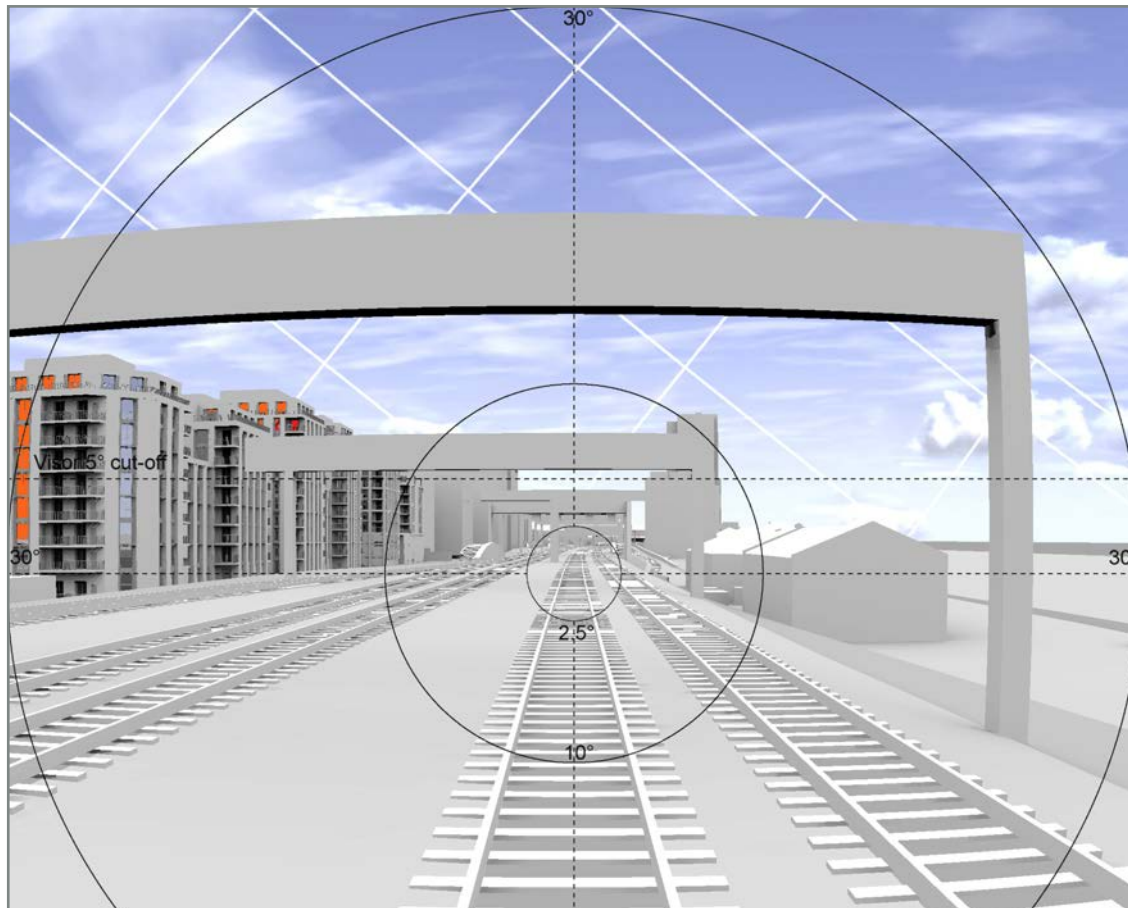


Fig. 74: Solar Glare - HOURS - Close-up

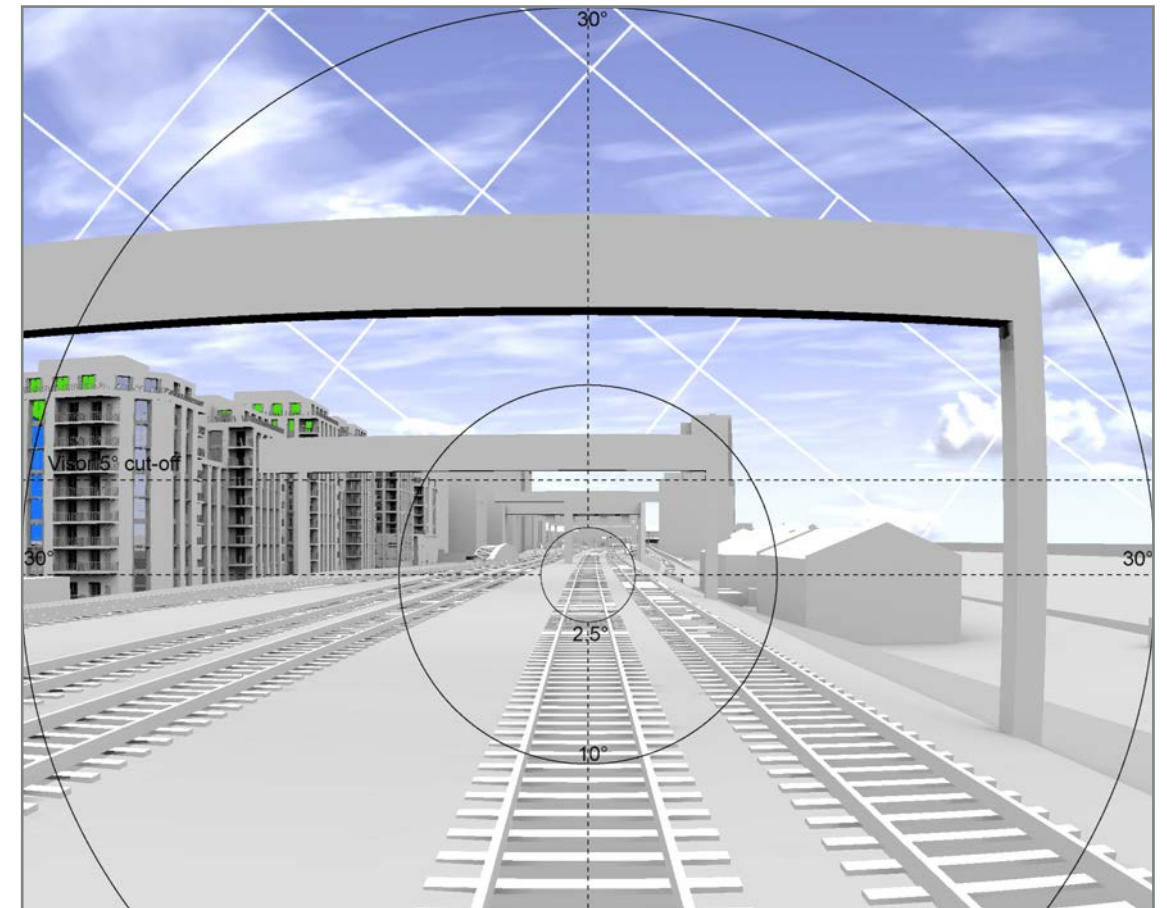


Fig. 75: Solar Glare - MONTHS - Close-up

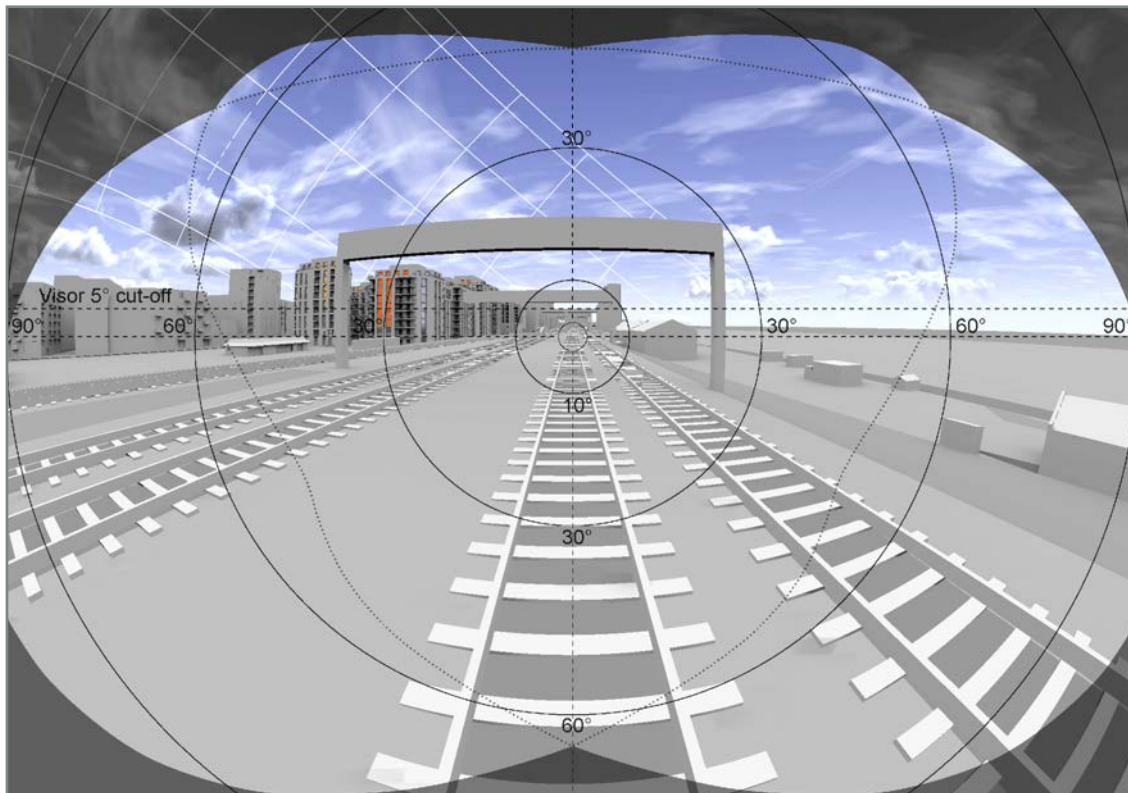


Fig. 76: Solar Glare - HOURS - 180 degrees view

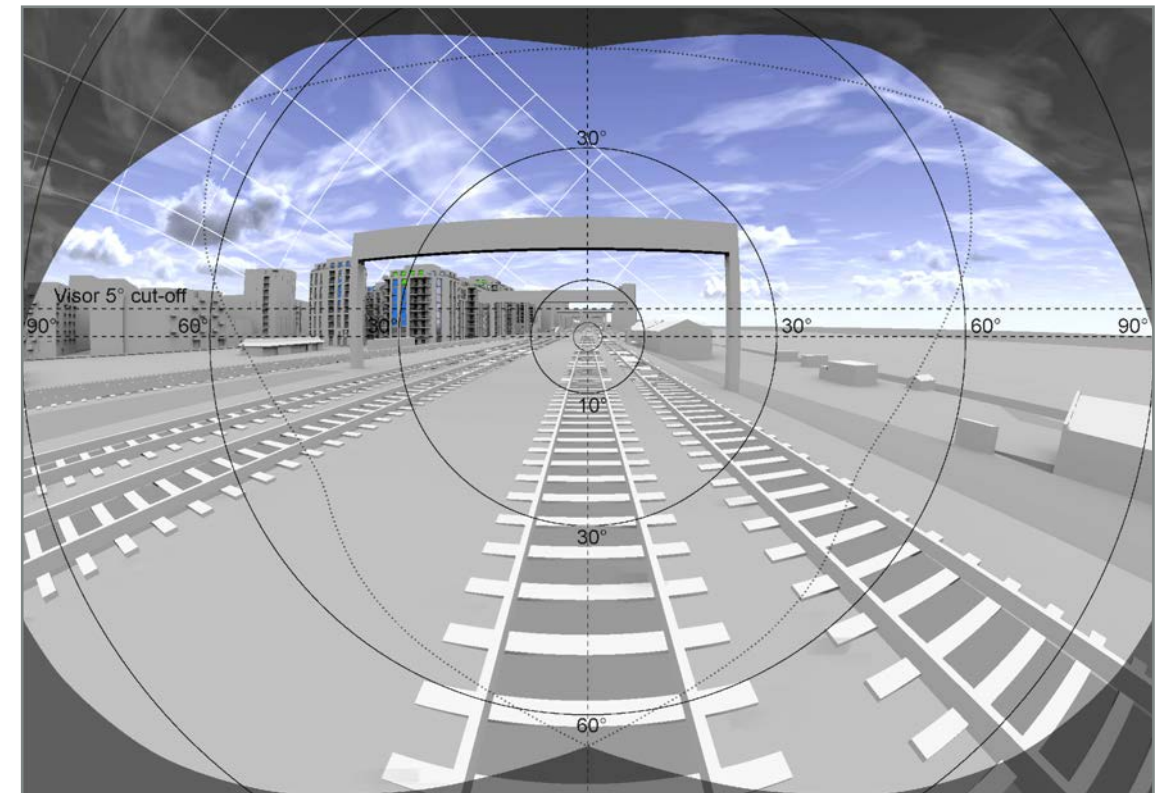
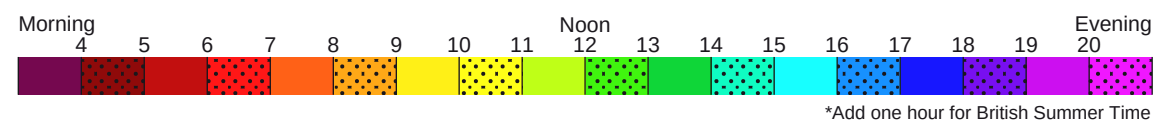


Fig. 77: Solar Glare - MONTHS - 180 degrees view

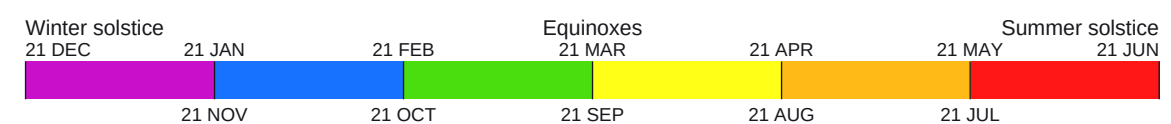




Fig. 78: Solar Glare - HOURS - Close-up



Fig. 79: Solar Glare - MONTHS - Close-up

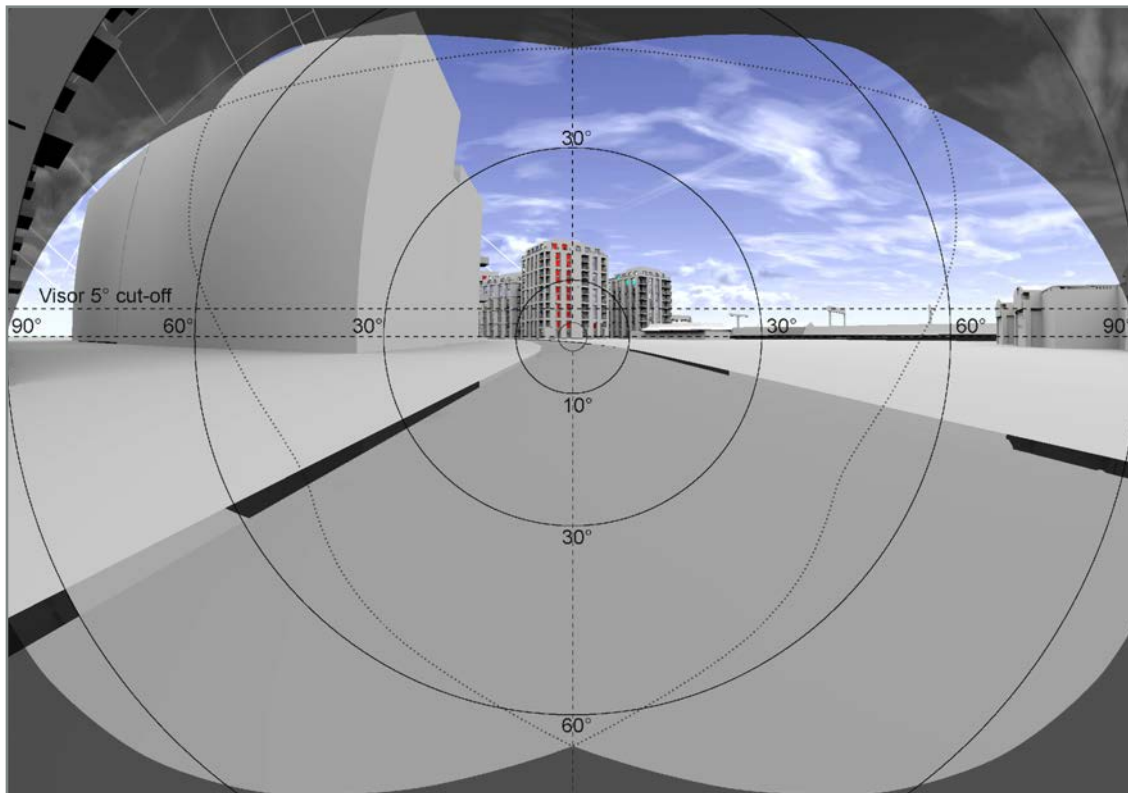


Fig. 80: Solar Glare - HOURS - 180 degrees view

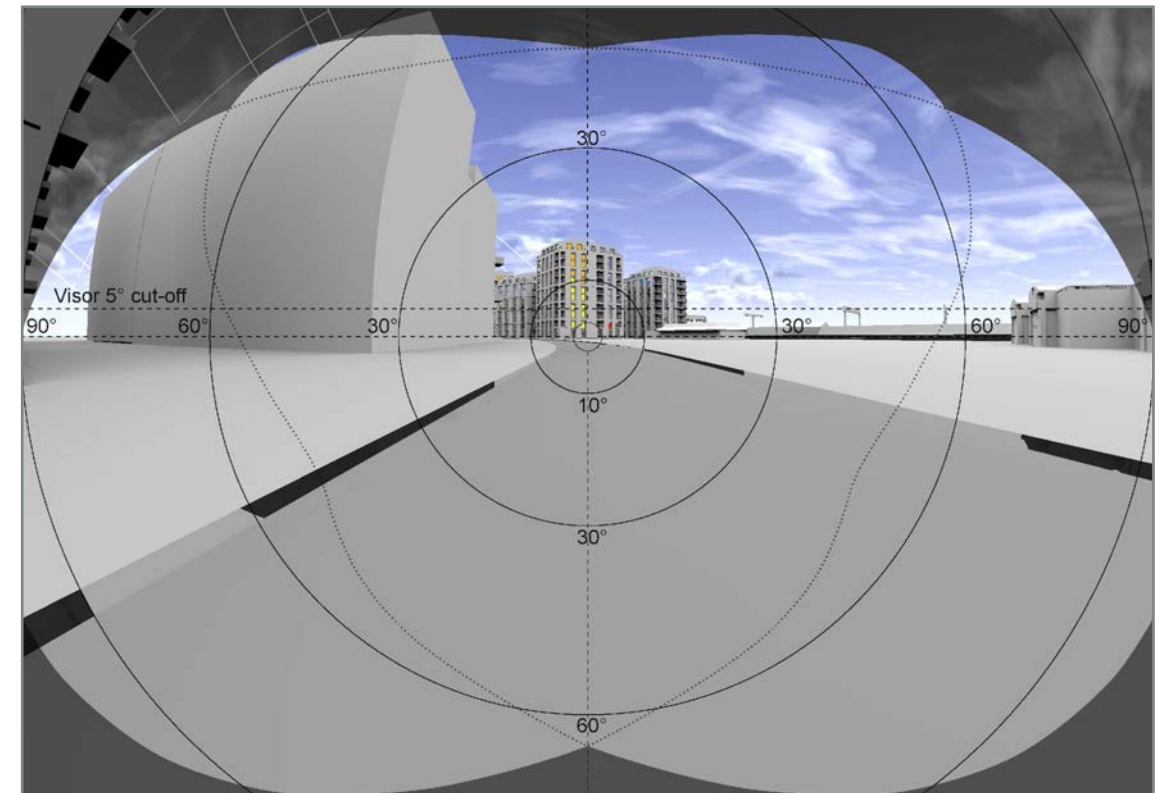
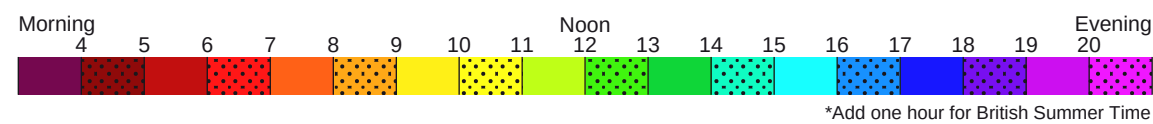


Fig. 81: Solar Glare - MONTHS - 180 degrees view

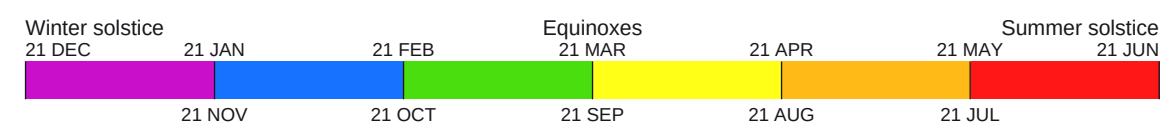




Fig. 82: Solar Glare - HOURS - Close-up



Fig. 83: Solar Glare - MONTHS - Close-up

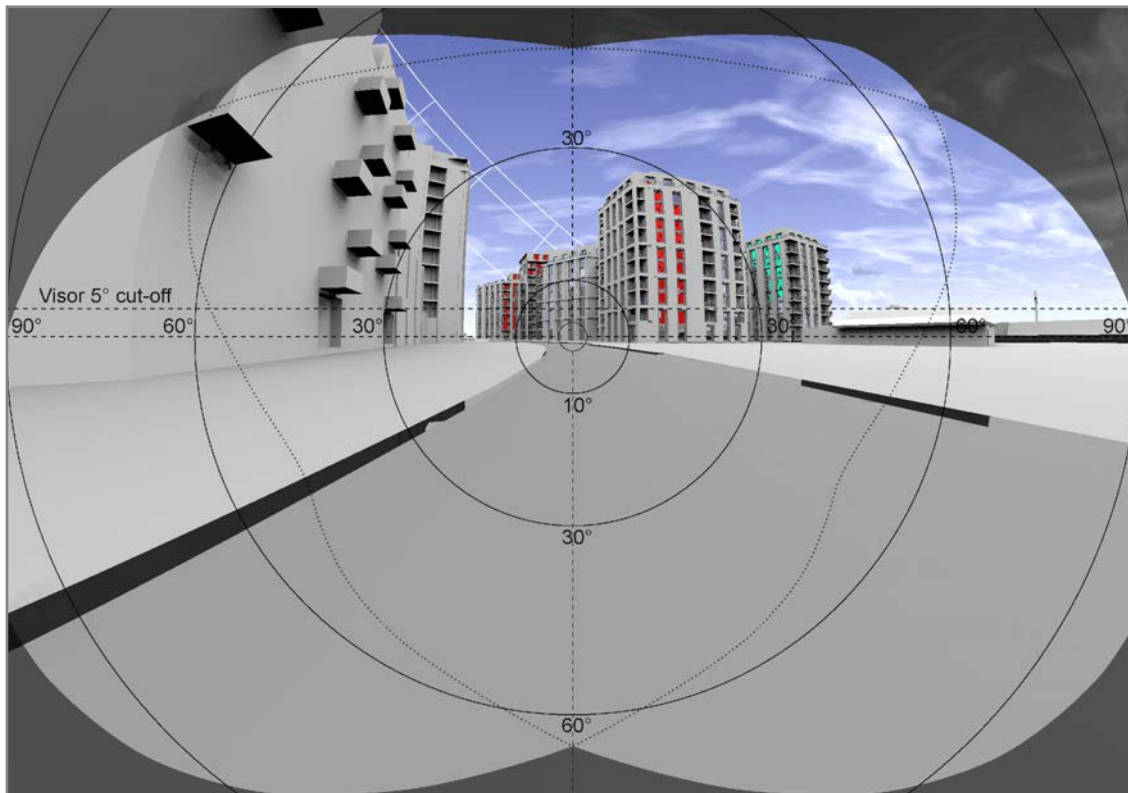


Fig. 84: Solar Glare - HOURS - 180 degrees view

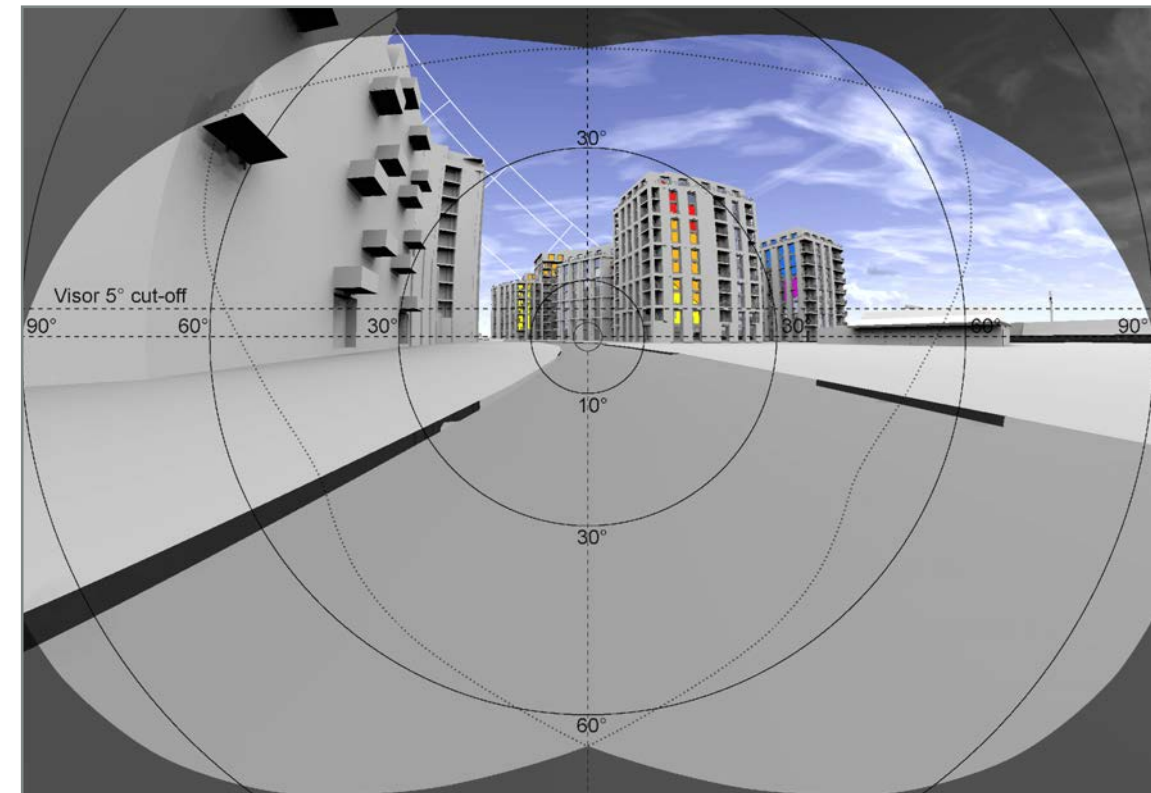
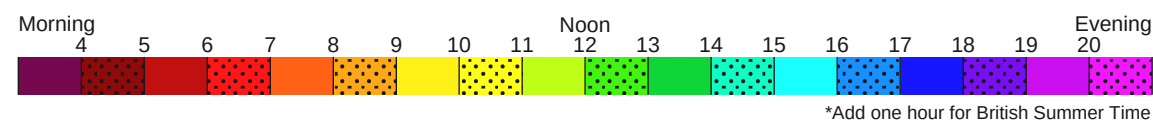
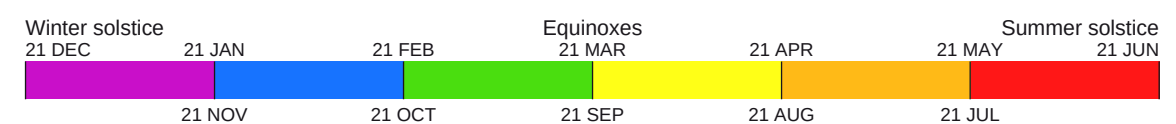


Fig. 85: Solar Glare - MONTHS - 180 degrees view



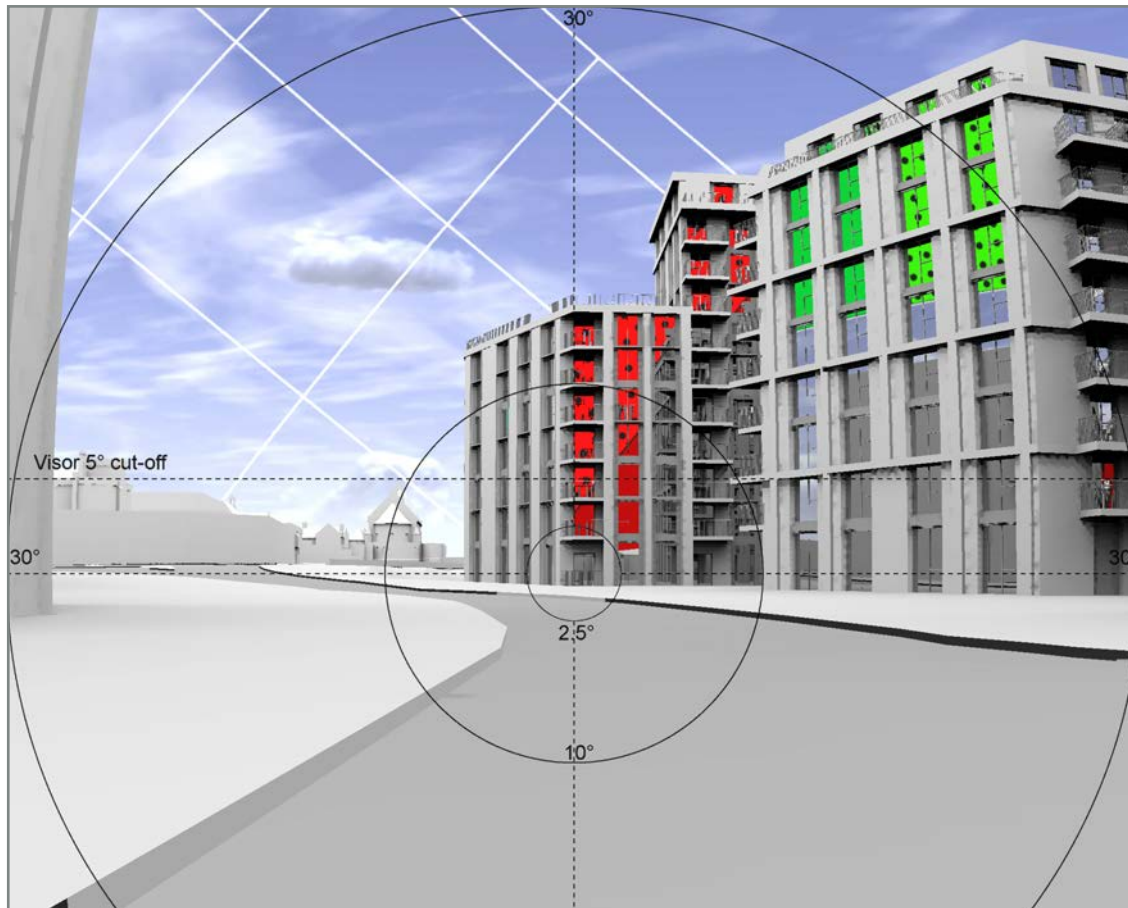


Fig. 86: Solar Glare - HOURS - Close-up

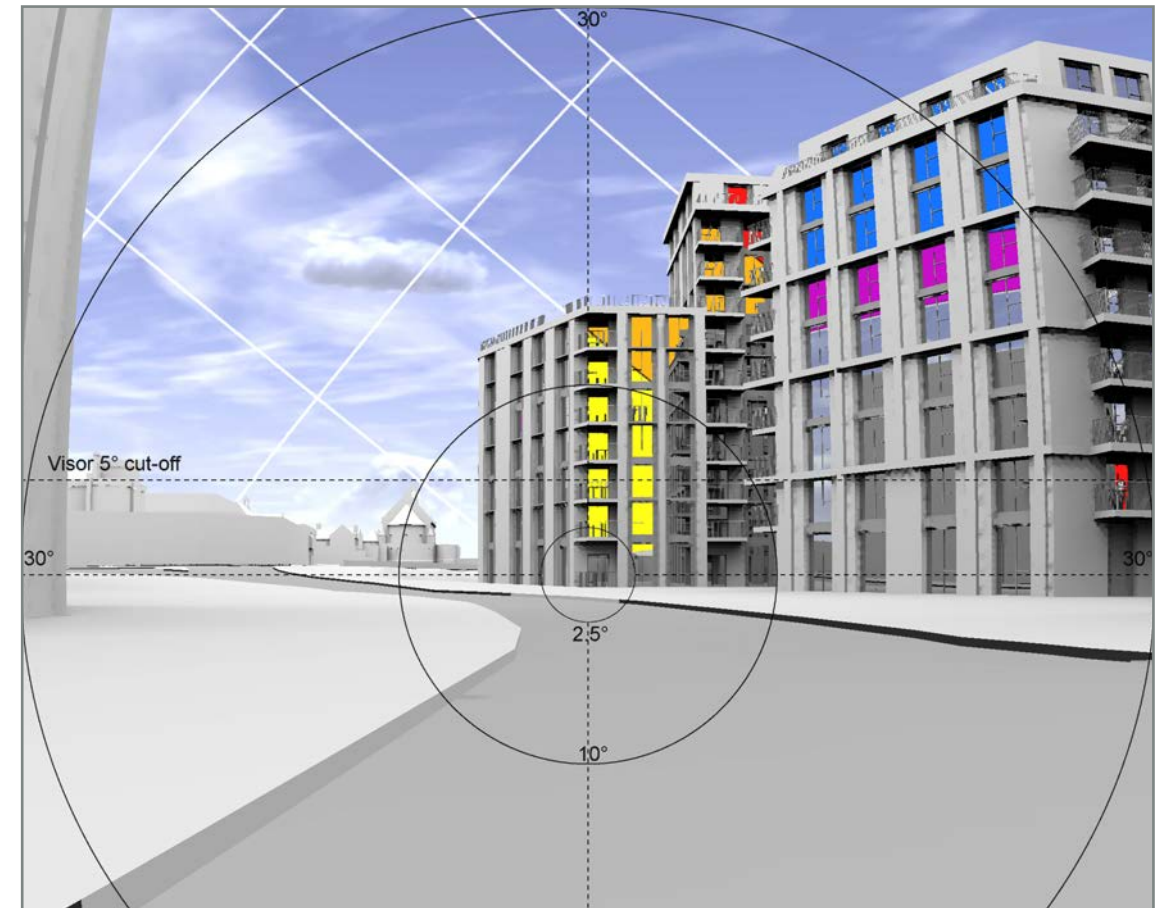


Fig. 87: Solar Glare - MONTHS - Close-up

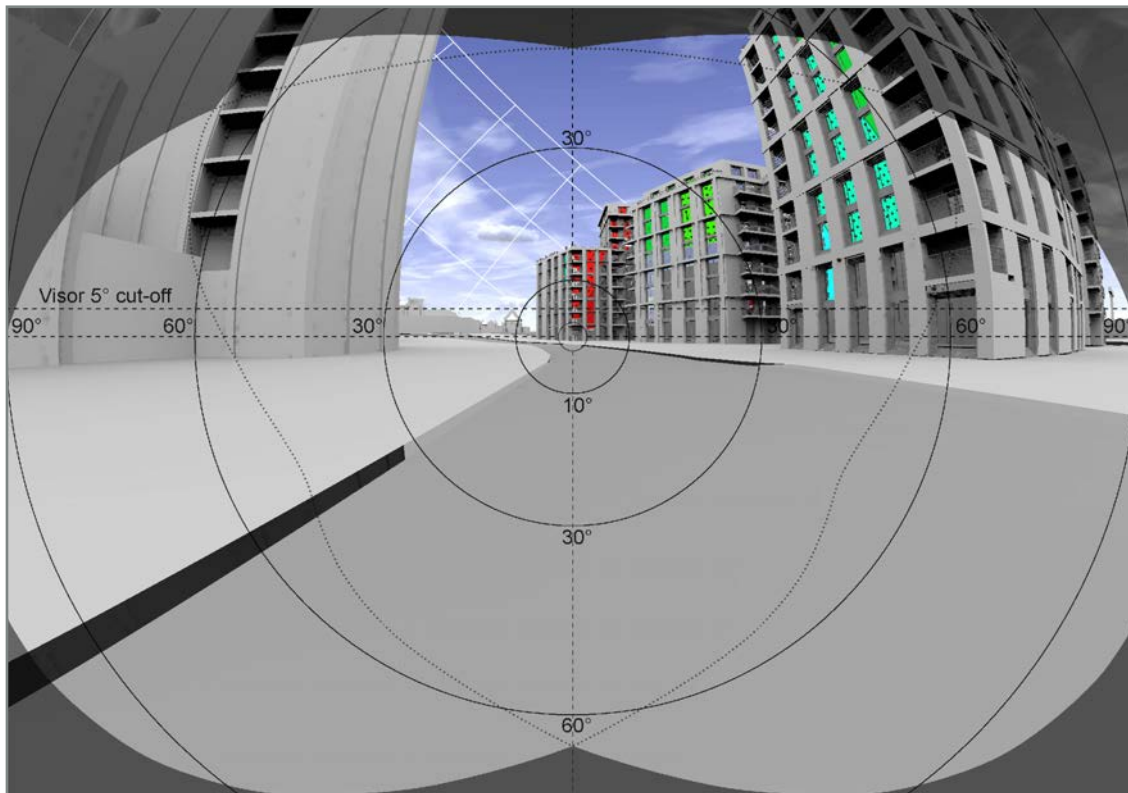


Fig. 88: Solar Glare - HOURS - 180 degrees view

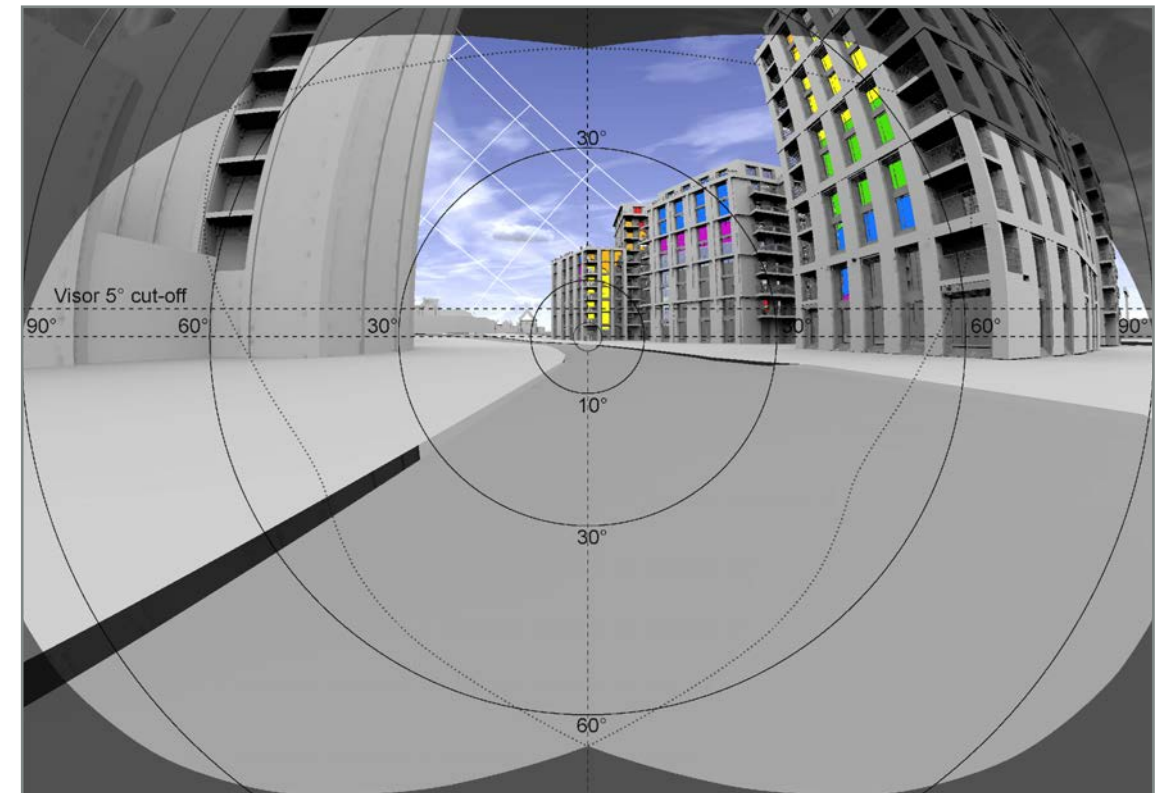
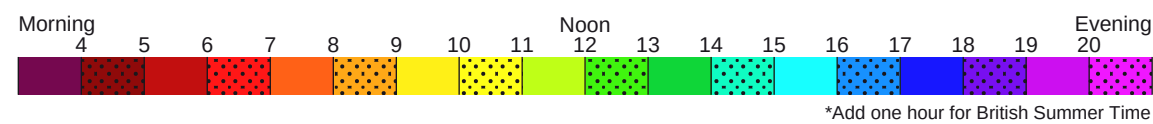


Fig. 89: Solar Glare - MONTHS - 180 degrees view

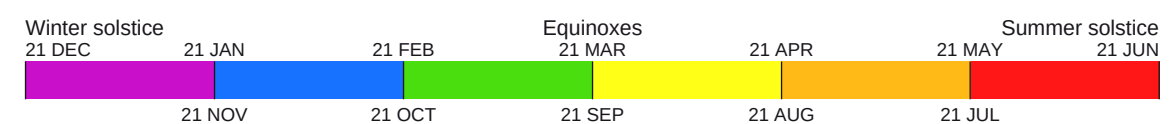




Fig. 90: Solar Glare - HOURS - Close-up



Fig. 91: Solar Glare - MONTHS - Close-up

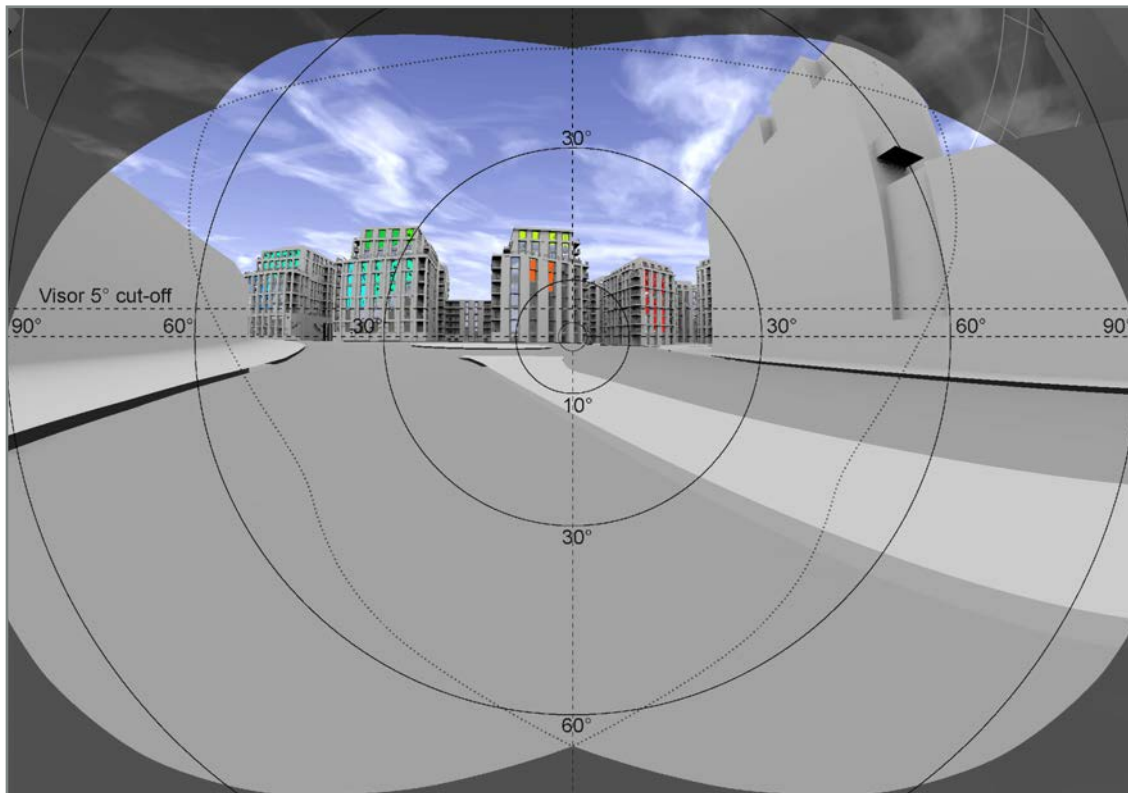


Fig. 92: Solar Glare - HOURS - 180 degrees view

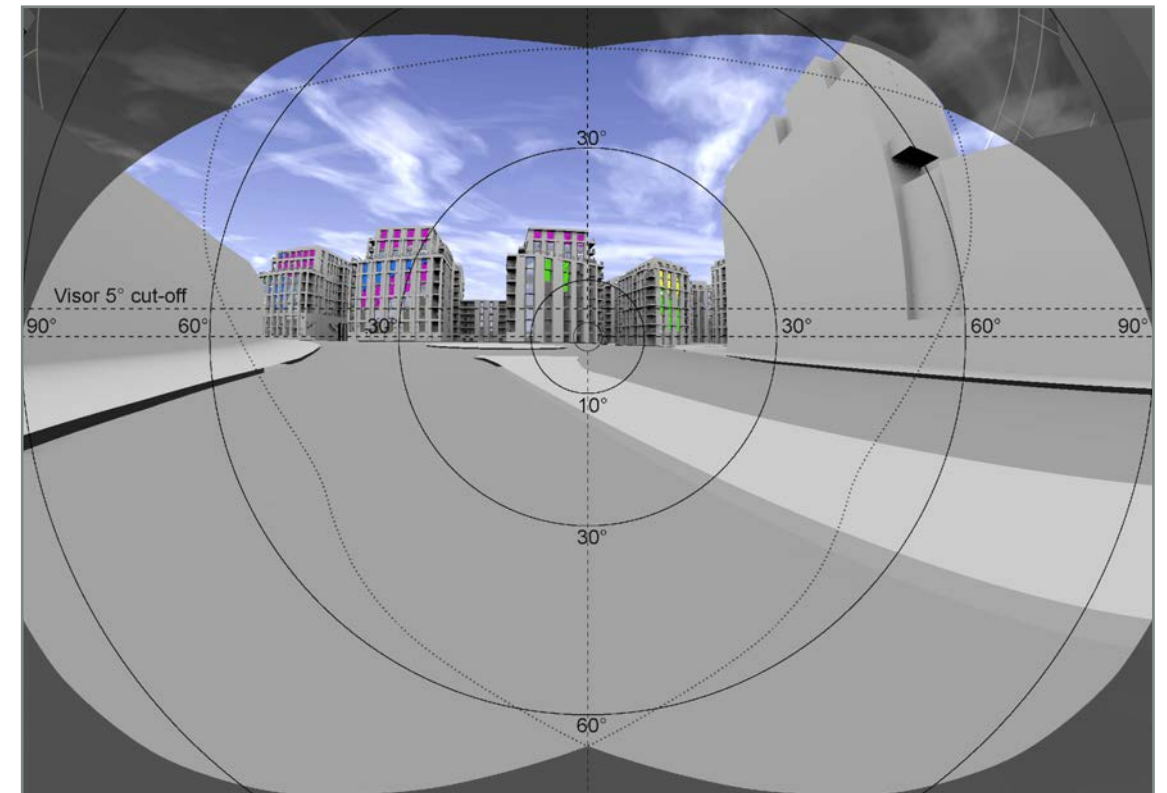
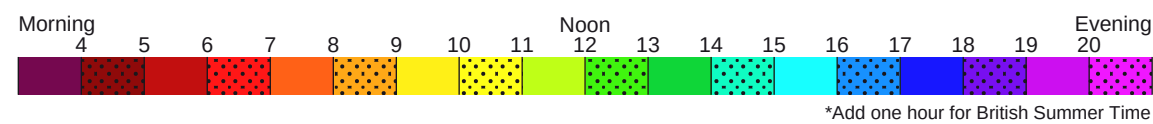


Fig. 93: Solar Glare - MONTHS - 180 degrees view

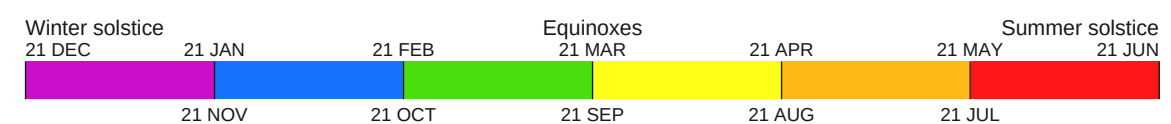




Fig. 94: Solar Glare - HOURS - Close-up



Fig. 95: Solar Glare - MONTHS - Close-up

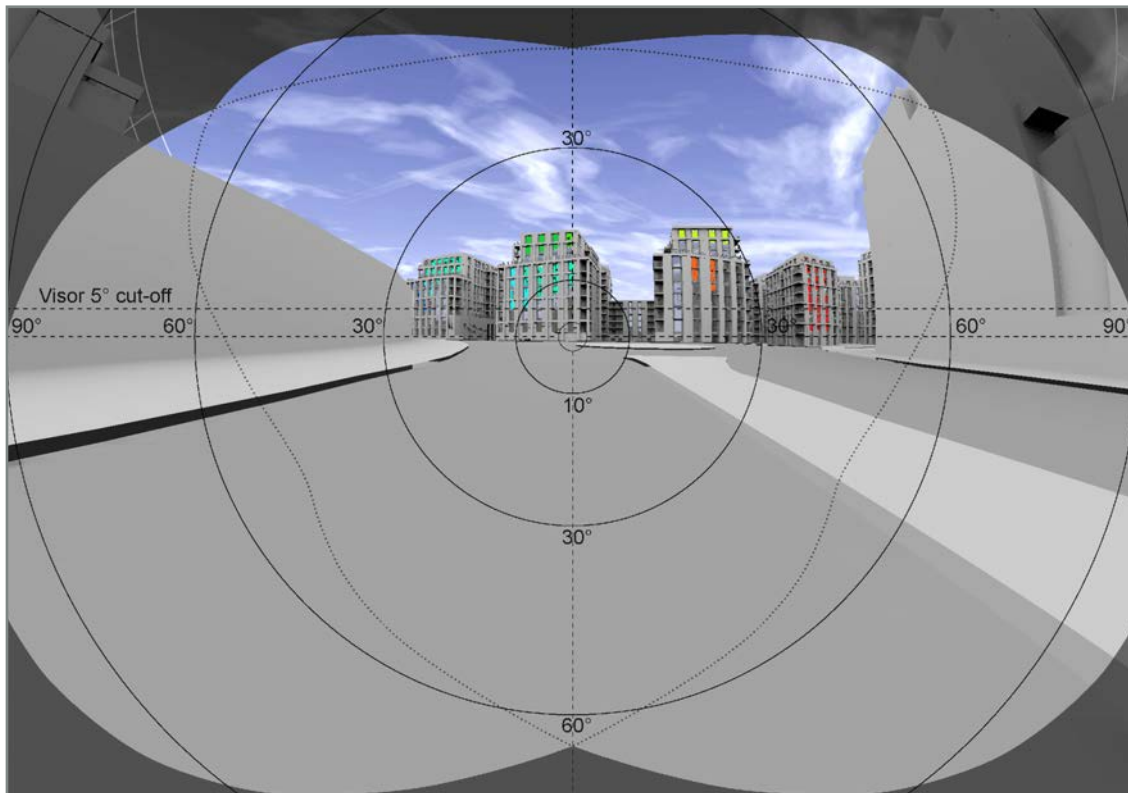


Fig. 96: Solar Glare - HOURS - 180 degrees view

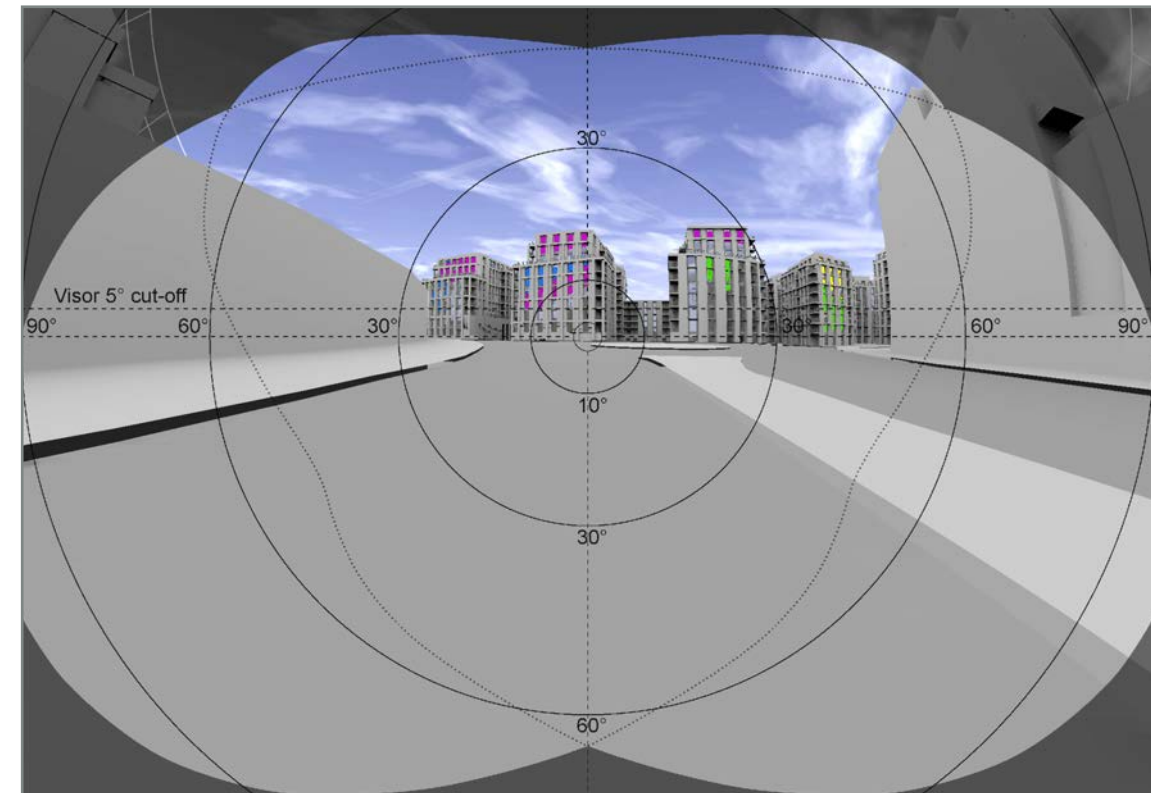
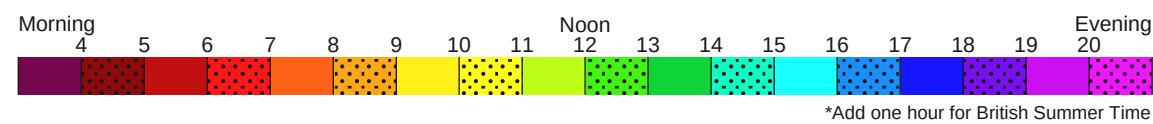


Fig. 97: Solar Glare - MONTHS - 180 degrees view

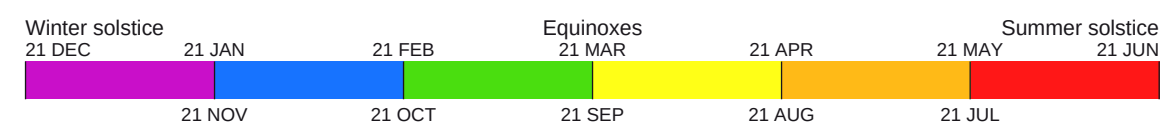




Fig. 98: Solar Glare - HOURS - Close-up



Fig. 99: Solar Glare - MONTHS - Close-up

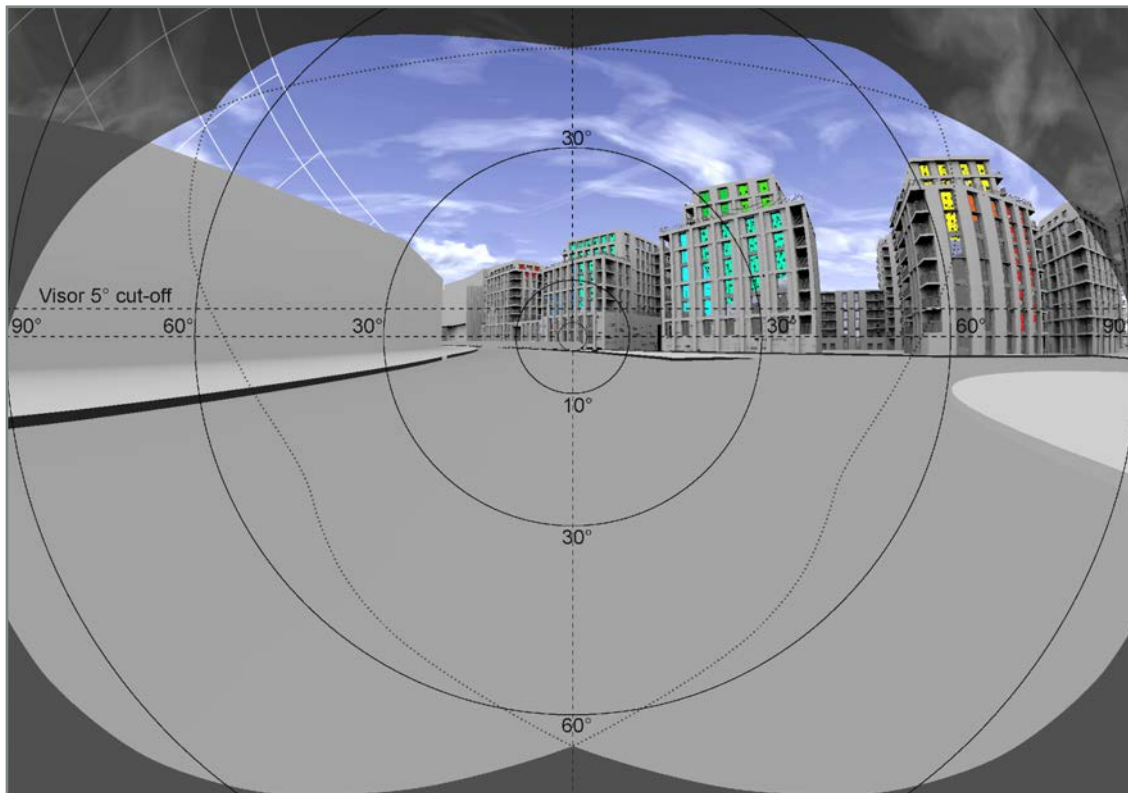


Fig. 100: Solar Glare - HOURS - 180 degrees view

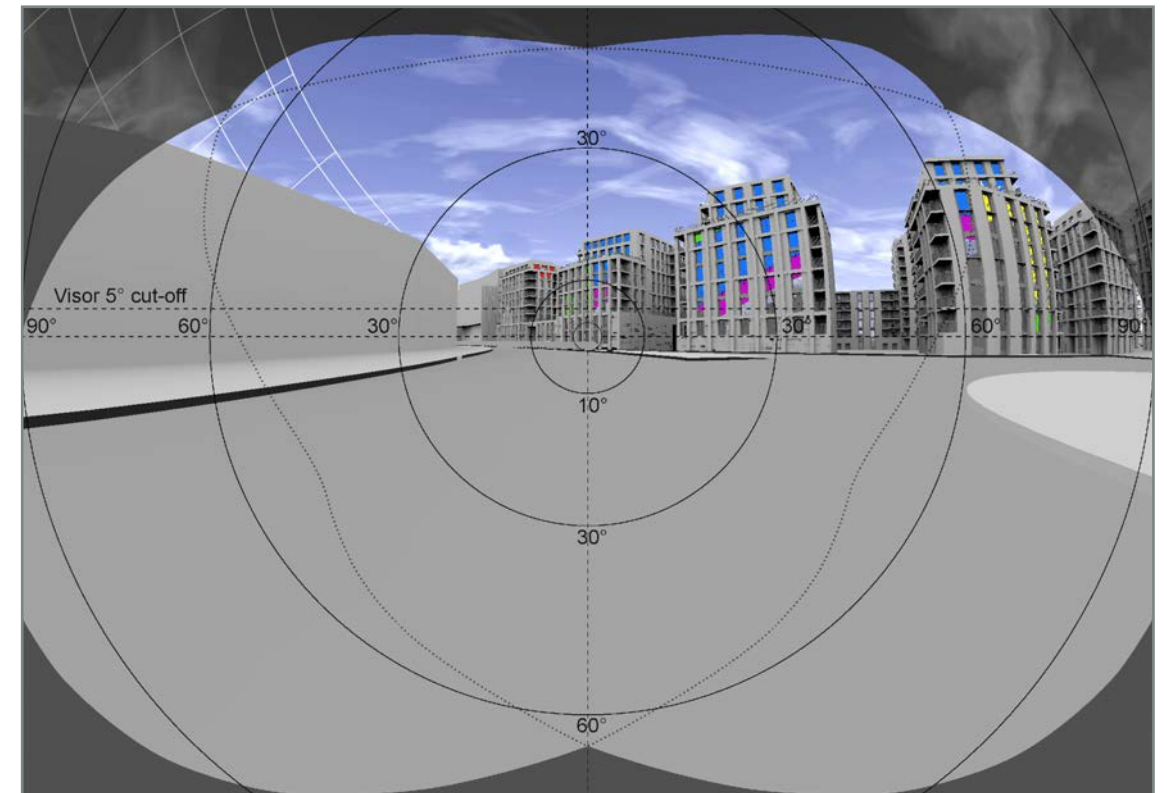
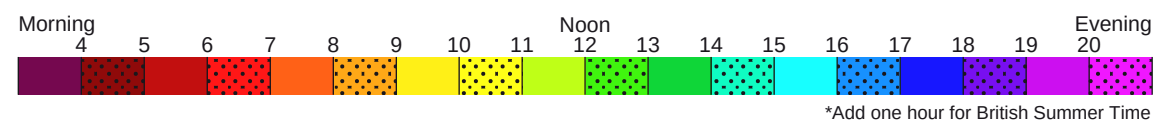
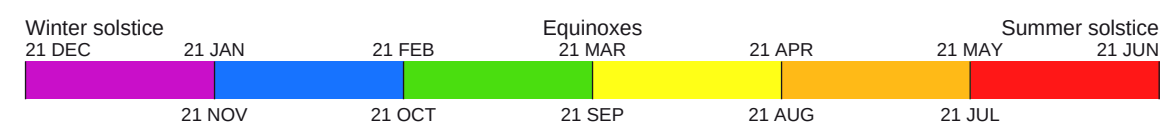


Fig. 101: Solar Glare - MONTHS - 180 degrees view



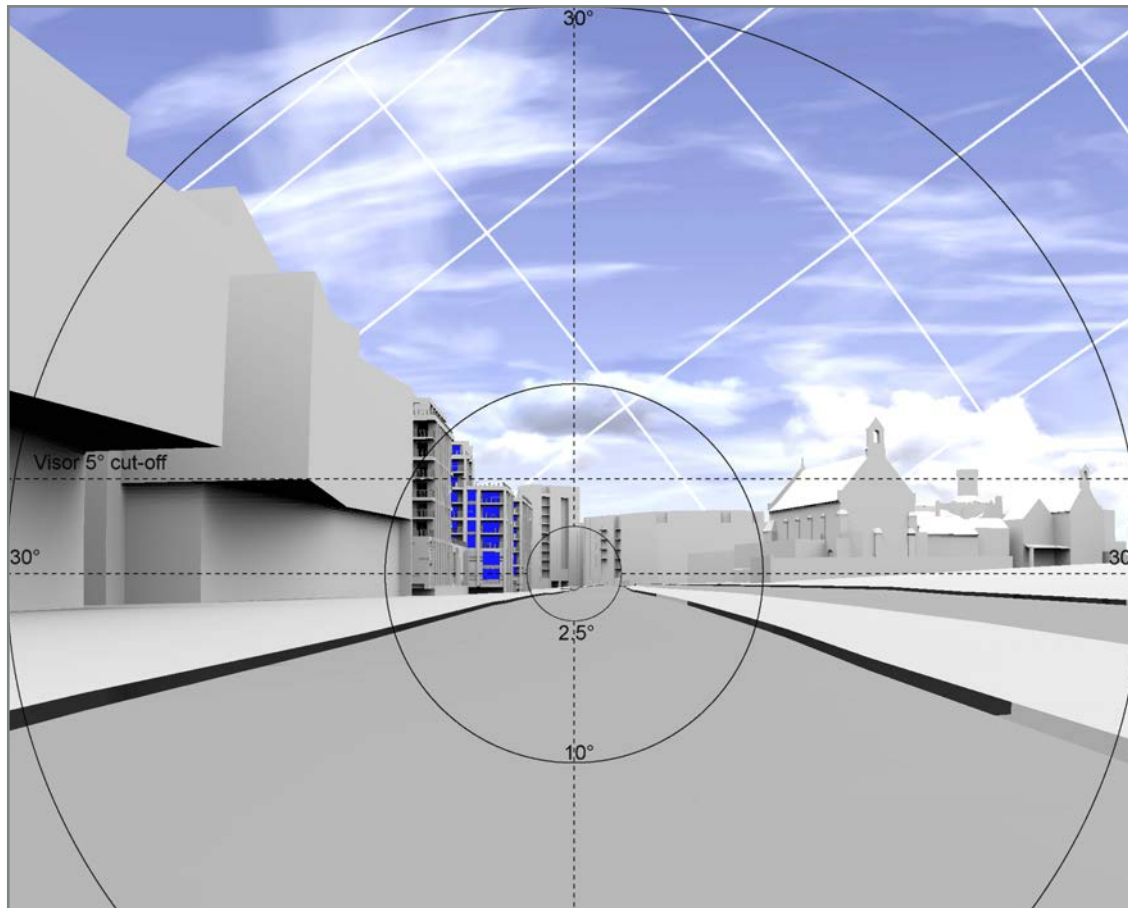


Fig. 102: Solar Glare - HOURS - Close-up

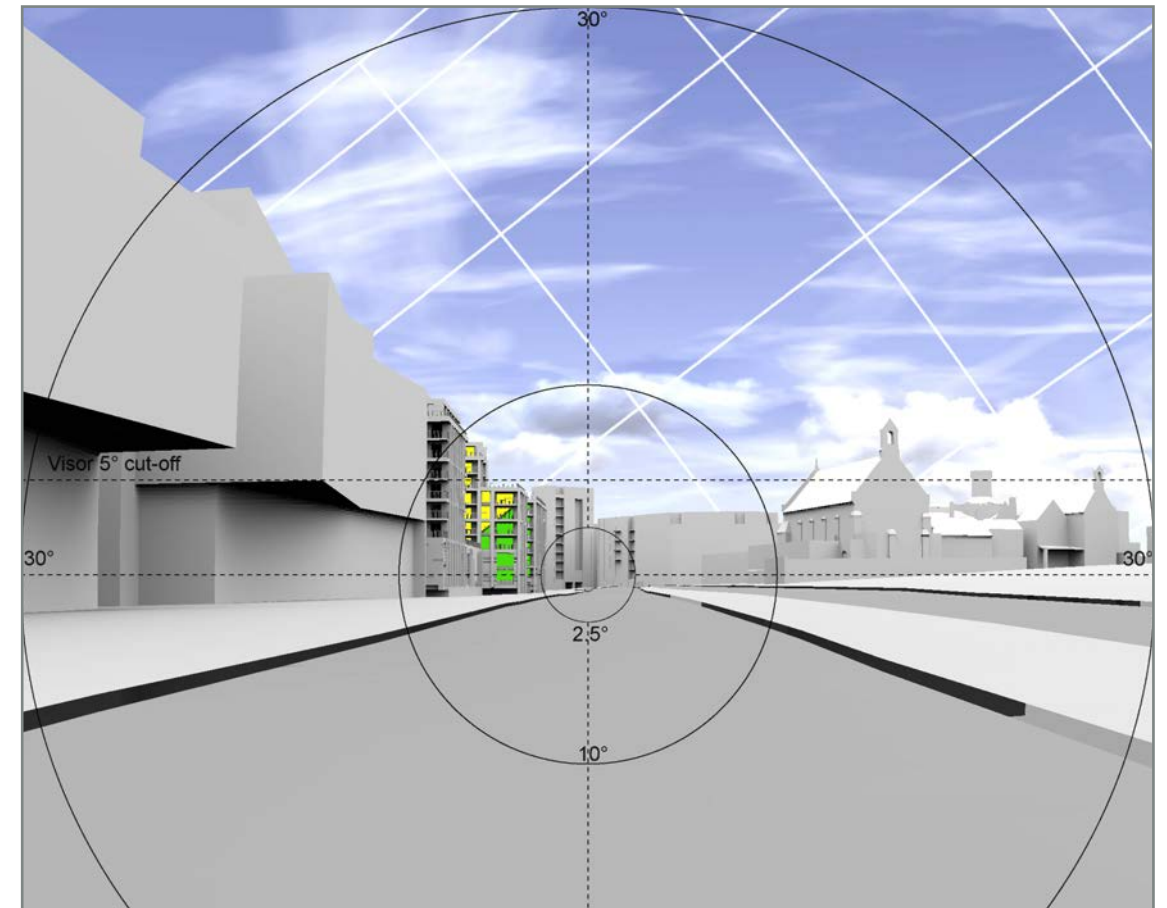


Fig. 103: Solar Glare - MONTHS - Close-up

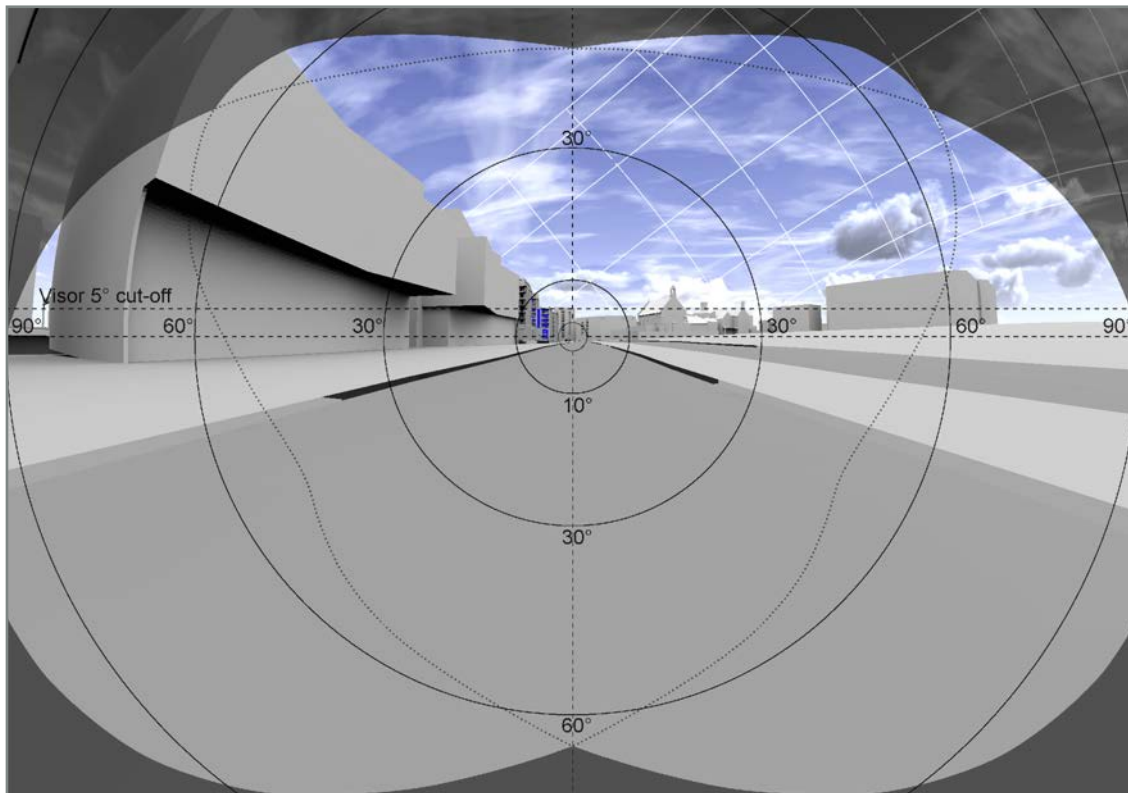


Fig. 104: Solar Glare - HOURS - 180 degrees view

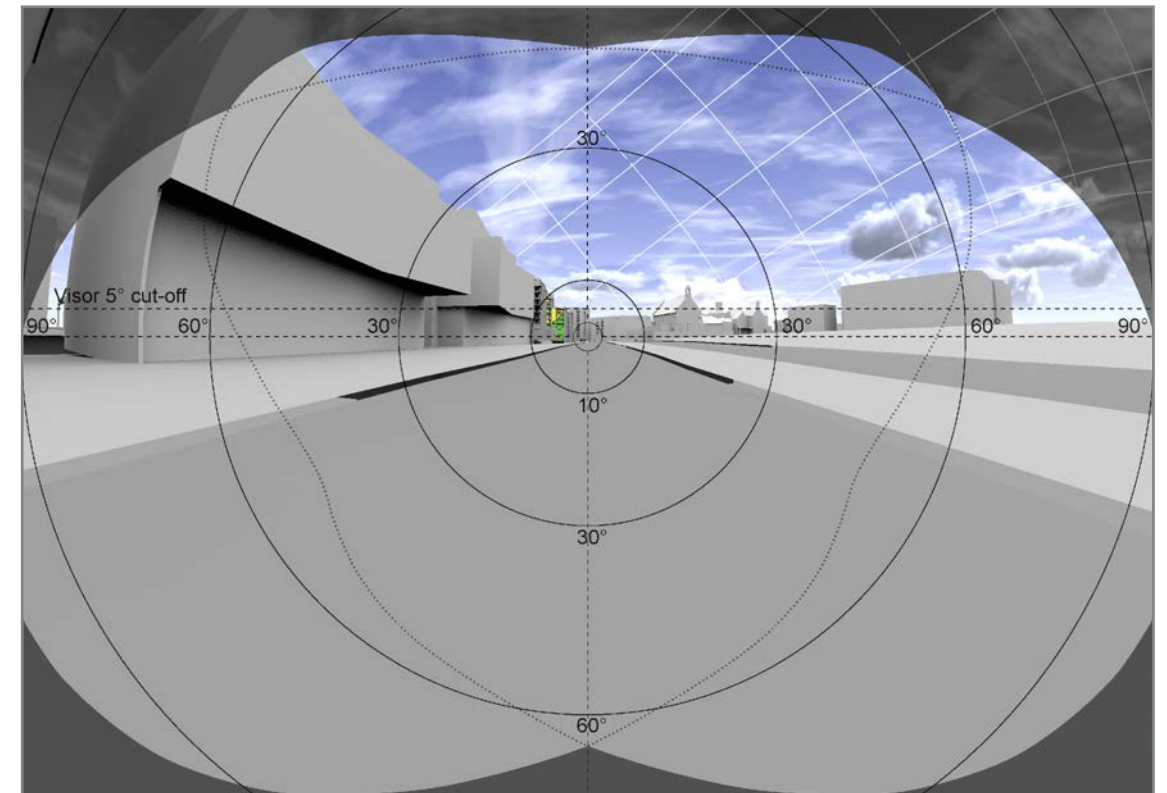
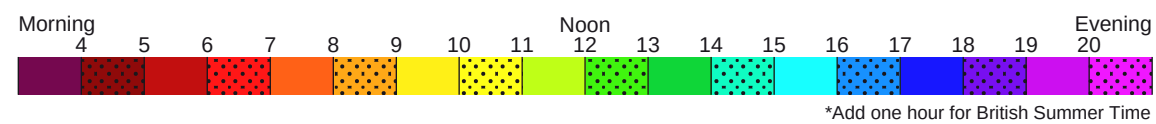
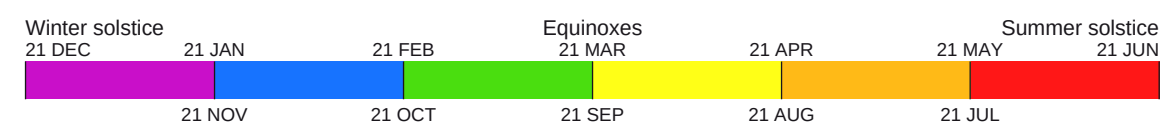


Fig. 105: Solar Glare - MONTHS - 180 degrees view



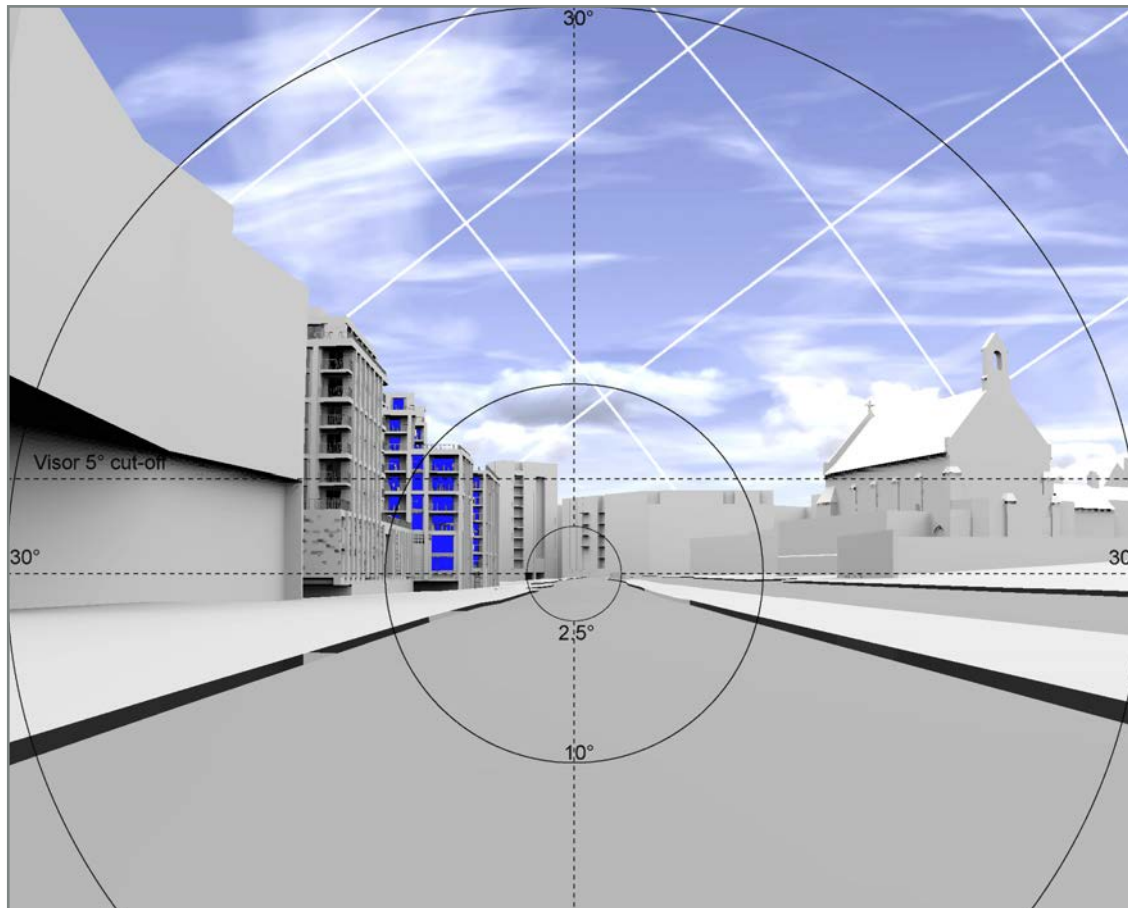


Fig. 106: Solar Glare - HOURS - Close-up

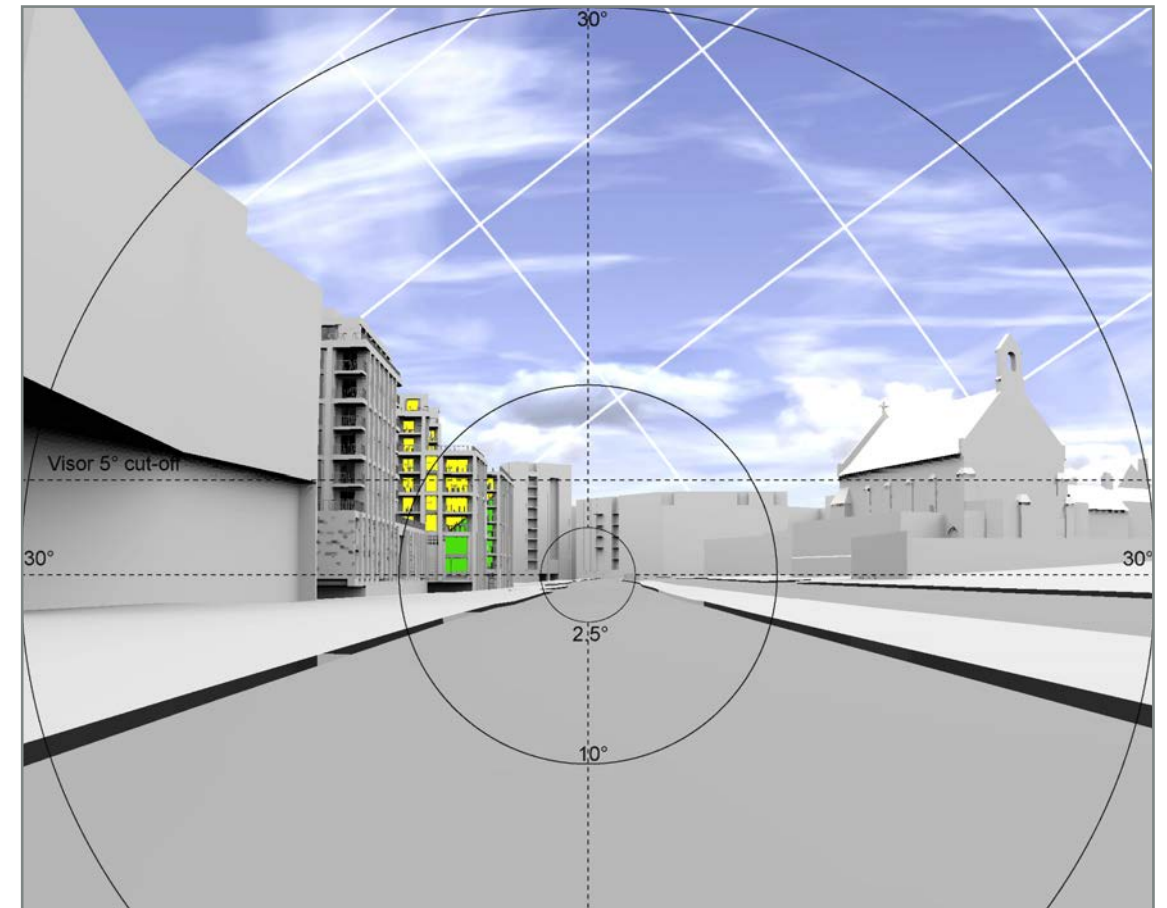


Fig. 107: Solar Glare - MONTHS - Close-up

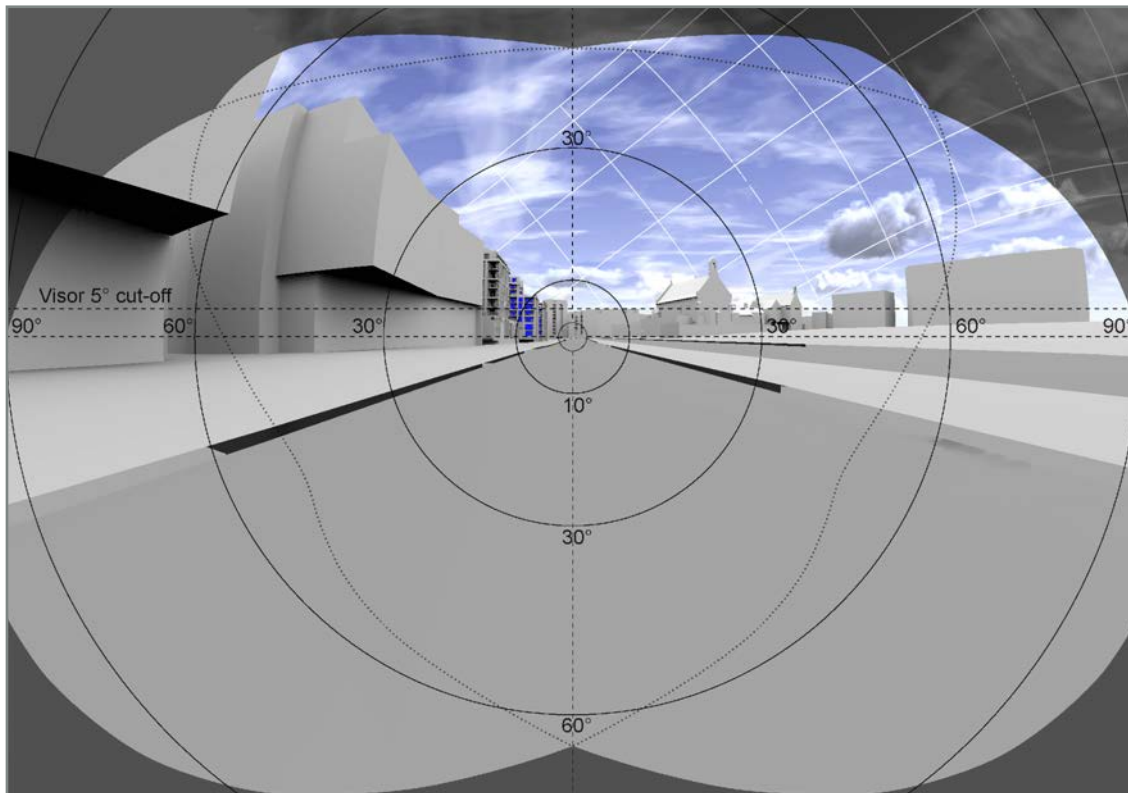


Fig. 108: Solar Glare - HOURS - 180 degrees view

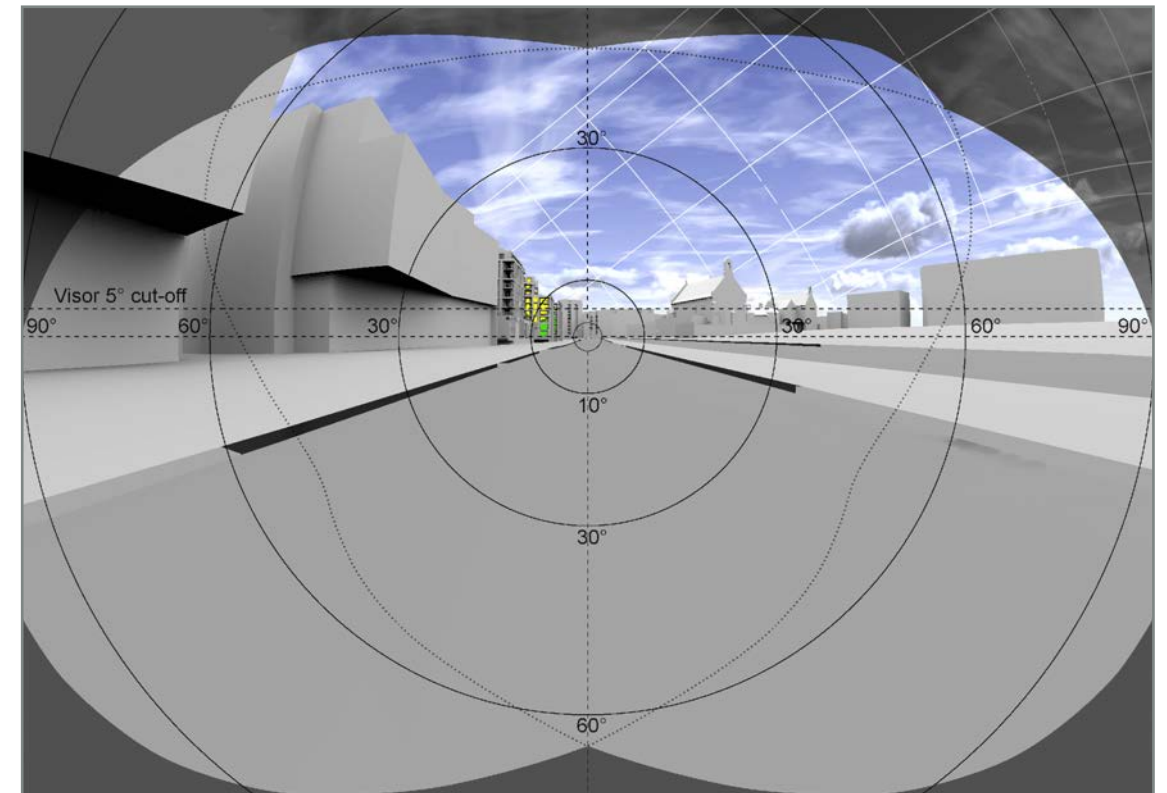
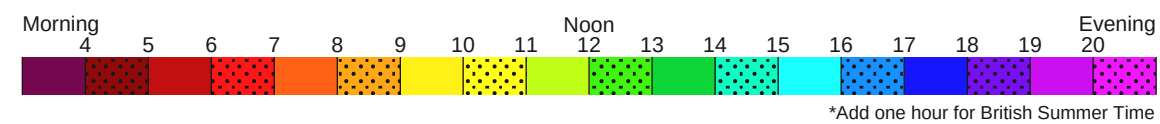
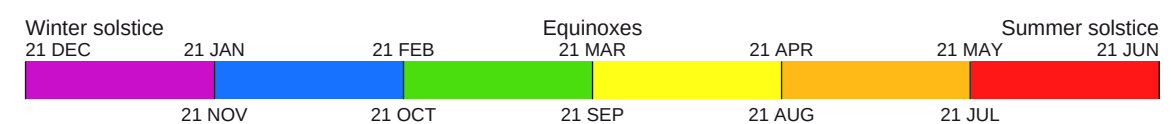


Fig. 109: Solar Glare - MONTHS - 180 degrees view



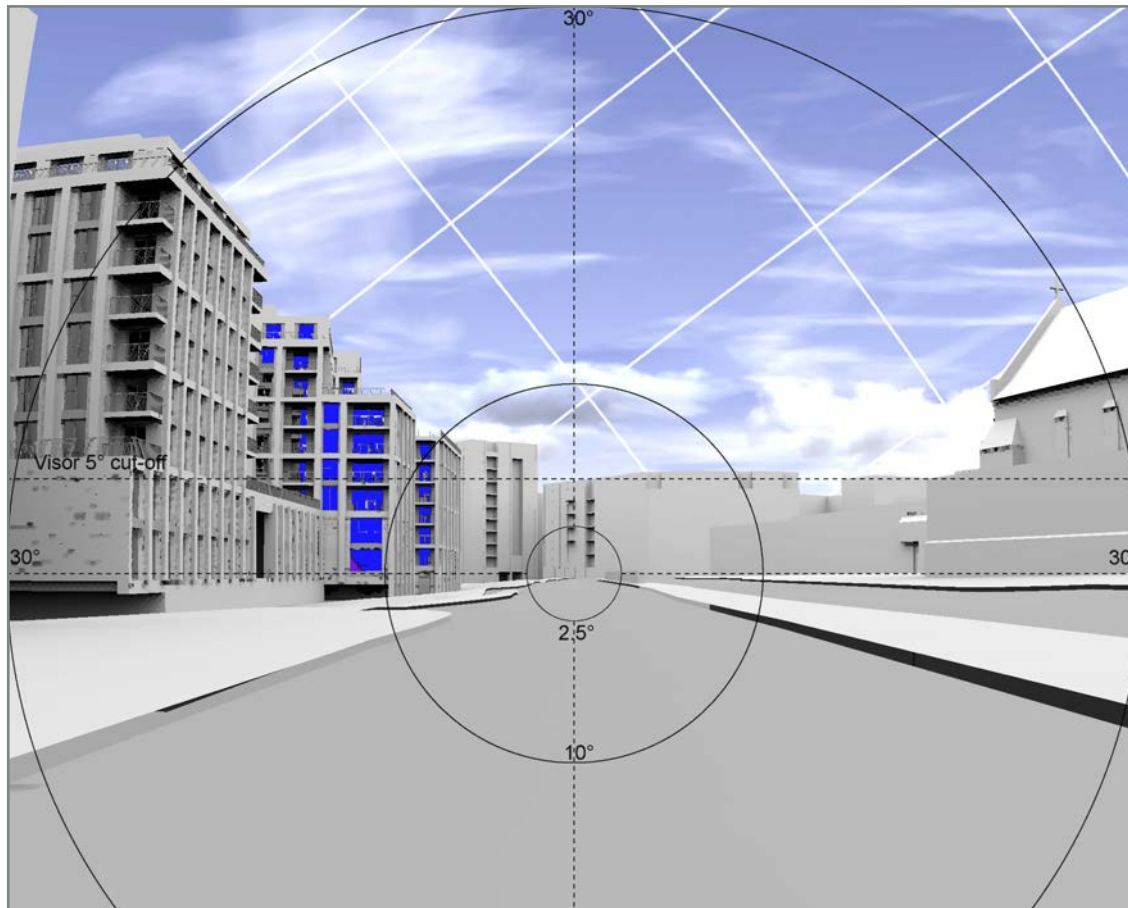


Fig. 110: Solar Glare - HOURS - Close-up

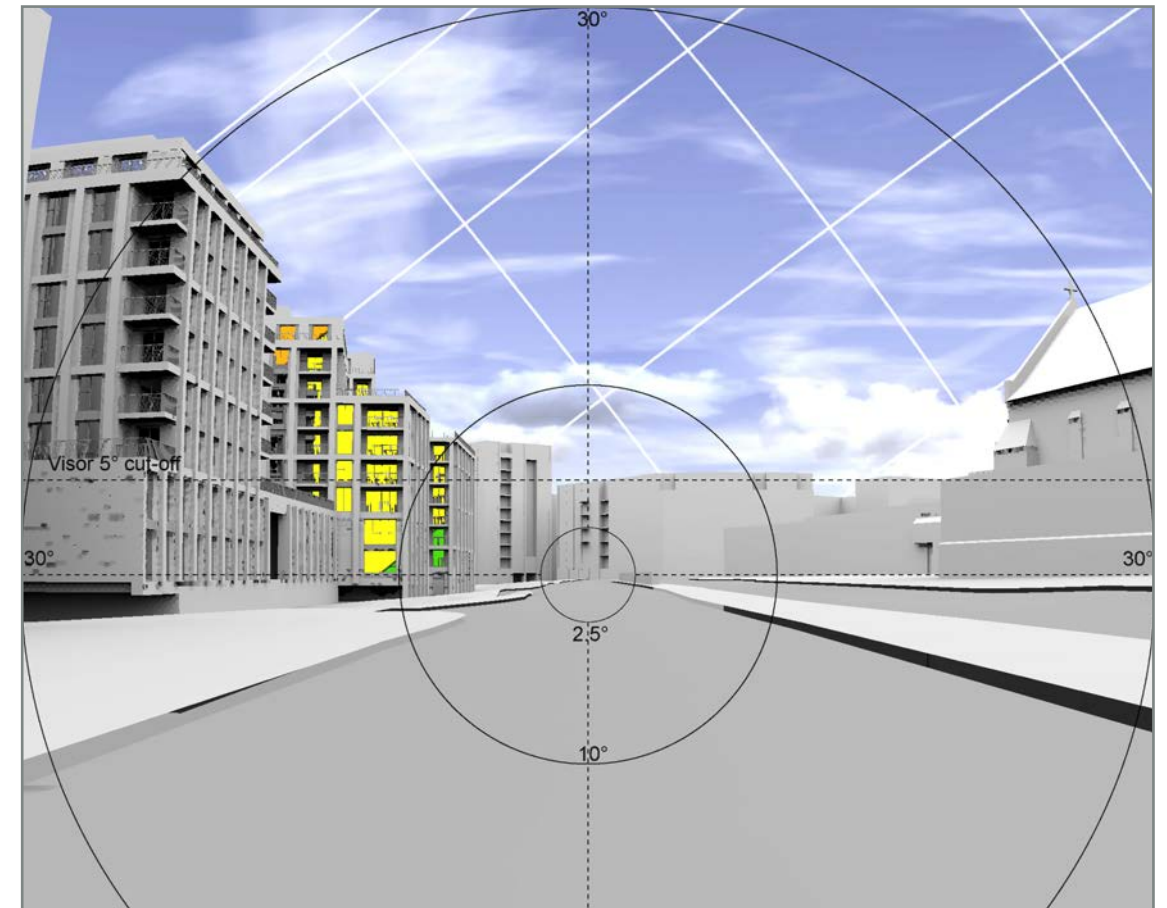


Fig. 111: Solar Glare - MONTHS - Close-up

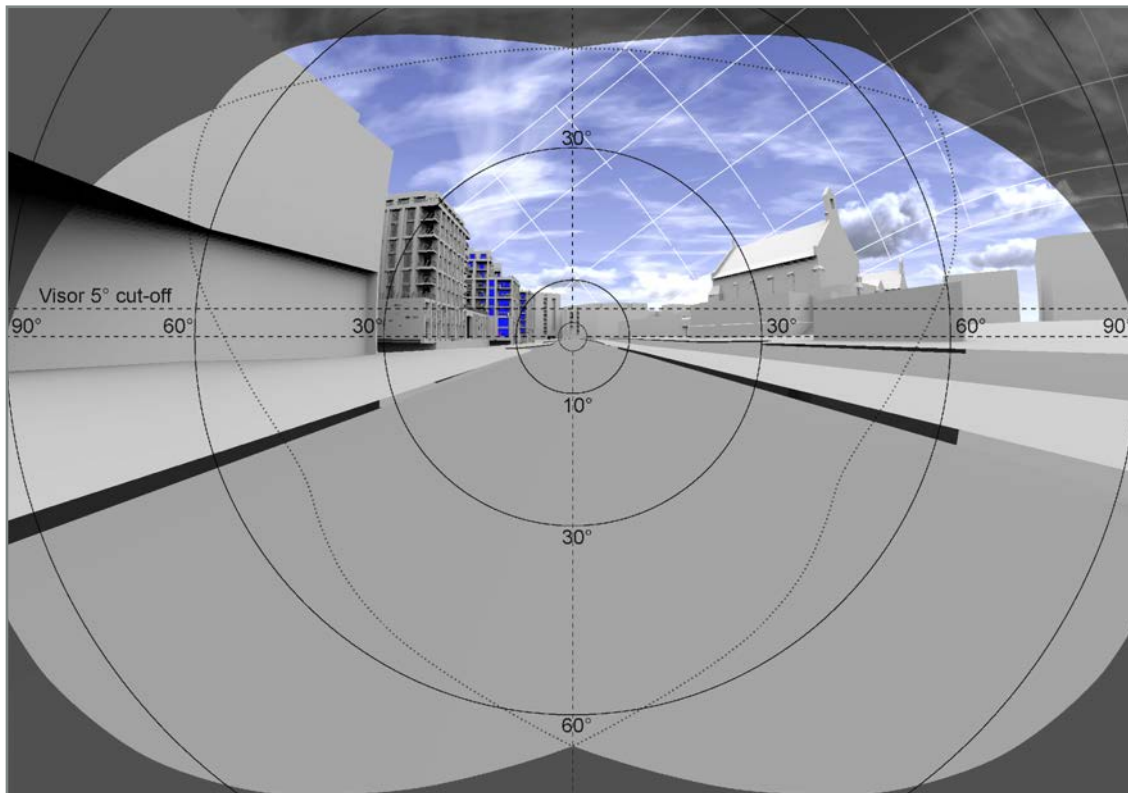


Fig. 112: Solar Glare - HOURS - 180 degrees view

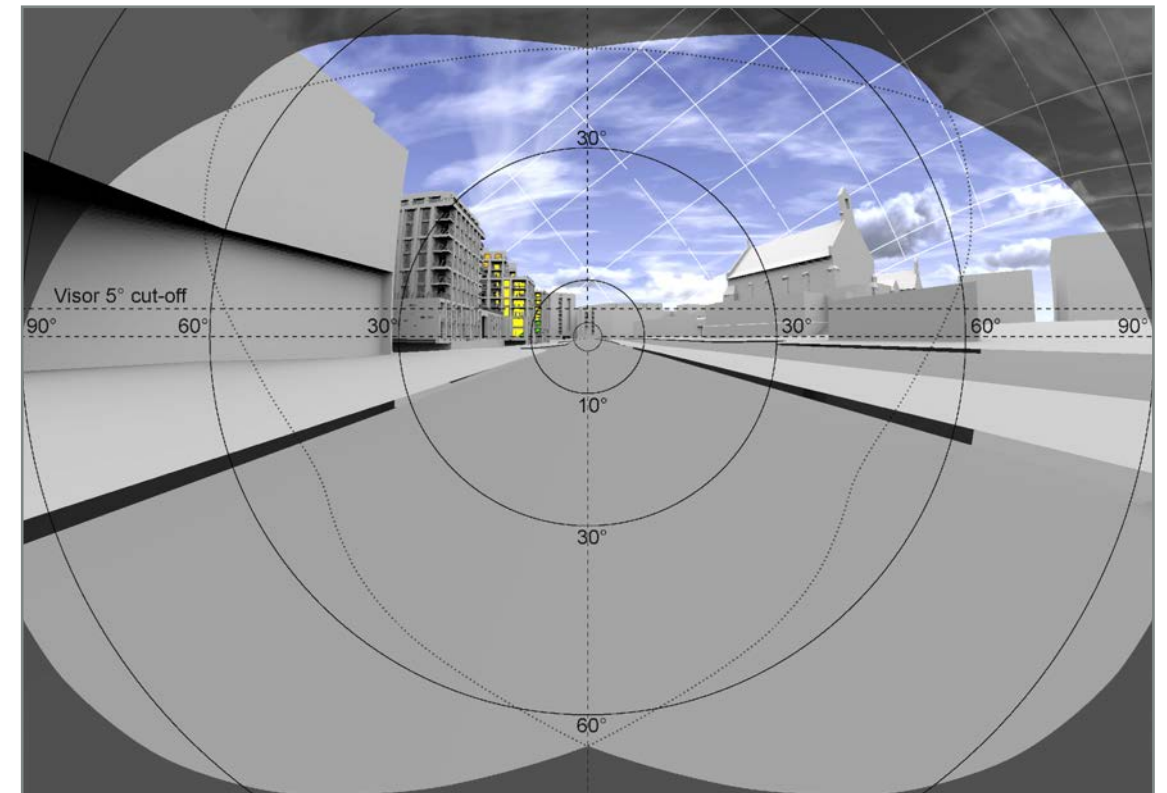
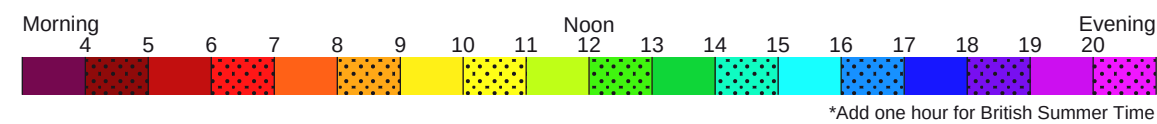
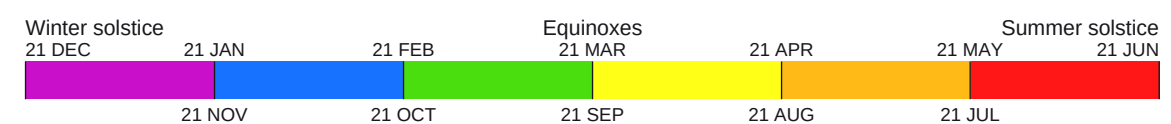


Fig. 113: Solar Glare - MONTHS - 180 degrees view



Appendix L.1 Wind Microclimate Technical Appendix



DRAFT REPORT

FORBURY RETAIL PARK

READING, UK

PEDESTRIAN LEVEL WIND MICROCLIMATE TECHNICAL APPENDIX

RWDI #2508863

OCTOBER 6TH, 2025

SUBMITTED TO

Ikon

SUBMITTED BY

RWDI



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VERSION HISTORY

RWDI Project #2508863		Forbury Retail Park, Reading, UK	
Report	Releases	Dated	
Reports	Rev A	October 6 th , 2025	
Project Team	ZRK		
	JLL		
	AC		

1 INTRODUCTION

This supporting technical appendix accompanies the wind microclimate ES submitted to for full planning permission for the development of Forbury Retail Park (hereafter referred to as the “Proposed Development”).

This ES has been prepared by RWDI and details the wind microclimate for the Proposed Development.

Computational Fluid Dynamics (CFD) simulations were conducted on the Proposed Development. The assessment quantifies the wind conditions within and around the Site by comparing the measured wind speed and frequency of occurrence with the Lawson Comfort Criteria¹. Meteorological data for Reading, adjusted to account for the effects of terrain roughness surrounding the Site have been utilised in this assessment.

The analysis allows wind comfort conditions to be obtained at ground level areas along the building façades and at corners, near entrances, and on pedestrian routes within and around the Site, as well as at potential terrace areas within the Site. The analysis was conducted on seasonal basis, however, the report focuses primarily on the windiest season (i.e. winter) and the summer season results, when pedestrian activity generally requires calmer conditions.

The following two scenarios were assessed:

- Configuration 1: Existing Site with Existing Surrounding Buildings; and
- Configuration 2: Proposed Development with Existing Surrounding Buildings.

¹ Building Aerodynamics, (2001); Lawson T.

2 METHODOLOGY AND ASSESSMENT CRITERIA

The 3D model of the Proposed Development used for CFD simulations of is shown in Appendix A. In each of the assessed scenarios surrounding buildings within a 400m radius of the centre of the Site were included.

The 'Results' section, shows the windiest season (typically winter) and the summer season (June to August) comfort plots. The comfort results are assessed at a height of 1.5m above the ground or building surface to represent conditions around people. The colours correspond to the Lawson Comfort Criteria described below in 2.2 'Pedestrian Comfort'.

CFD is a computer modelling technique for numerically simulating wind flow in complex environments. For this study, computational modelling was undertaken using OpenFOAM version 4.1 with 18 wind angles tested for each scenario, equally spaced out around the compass (equal 20 degrees intervals). Although the strongest winds originate from the westerly sector, this quantity of wind angles will provide sufficient coverage of all aerodynamic interactions from winds from all angles.

The individual cases of the Proposed Development were solved using a RANS approach with an RNG k- ϵ turbulence model. The steady state RANS type model with the RNG k- ϵ turbulence model is chosen over other turbulence models or transient type schemes for wind microclimate studies by RWDI for its ability to approximate highly complex flows within urban environments to a high level of accuracy against a practical computational time. The statistically steady solution obtained by RANS simulations does not have the ability to predict the fluctuating or gusty nature of wind. As comfort is a function of average conditions, this model is more suited to help analyse this.

The potential for strong winds leading to potential safety issues is assessed using informed engineering judgement.

2.1 Meteorological Data

The meteorological data is presented by season in Figure 1 as wind roses. The radial axis indicates the percentage of hours per season that the wind speed exceeds the particular velocity range. The seasons are defined as spring (March, April and May), summer (June, July and August), autumn (September, October and November) and winter (December, January and February).

The meteorological data indicates prevailing winds from the south-west throughout the year. This is typical for many areas of southern England. There is a secondary peak from the north-east during the spring season.

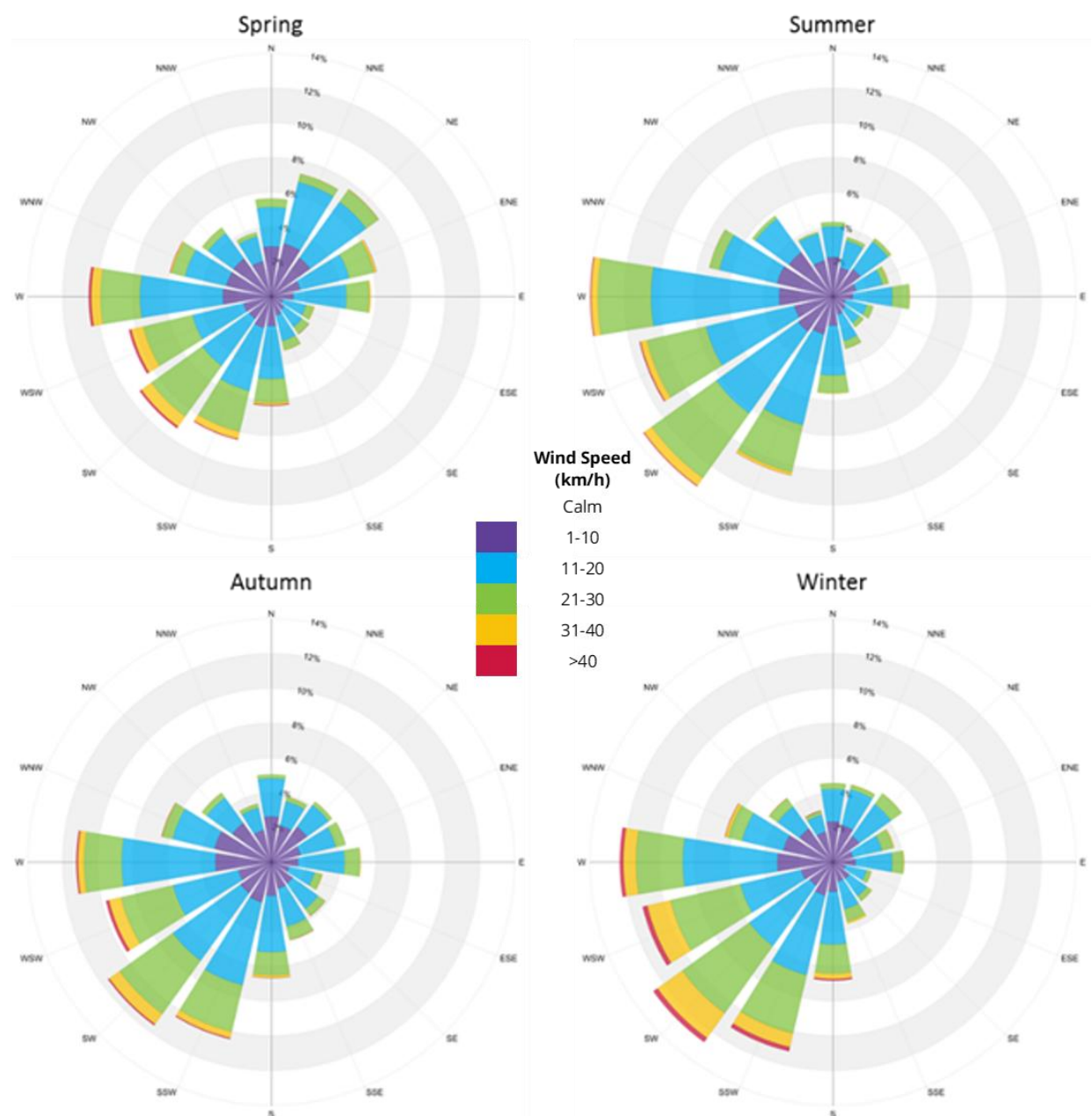


Figure 1: Seasonal Wind Roses for London Heathrow Airport (Radial axis indicates the percentage of time for which the stated wind speed threshold is exceeded)

2.2 Pedestrian Comfort

The assessment of the wind conditions requires a standard against which the measurements can be compared. This report uses the Lawson Comfort Criteria, which have been established for over thirty years. The Criteria, which seek to define the reaction of an average pedestrian to the wind, are described in Table 1. If the measured wind conditions exceed the threshold wind speed for more than 5% of the time, then they are unacceptable for the stated pedestrian activity and the expectation is that there may be complaints of nuisance or people will not use the area for its intended purpose.

The Criteria set out four pedestrian activities and reflect the fact that less active pursuits require more benign wind conditions. The four categories are sitting, standing, strolling and walking, in ascending order of activity level, with a fifth category for conditions that are uncomfortable for all uses. In other words, the wind conditions in an area for sitting need to be calmer than a location that people merely walk past.

The distinction between strolling and walking is that in the strolling scenario pedestrians are more likely to take on a more leisurely pace, with the intention of taking time to move through the area, whereas in the walking scenario pedestrians are intending to move through the area quickly and are therefore expected to be more tolerant of windier conditions.

The Criteria are derived for open air conditions and assume that pedestrians will be suitably dressed for the season. Thermal comfort is discussed with reference to acceptable wind environments but not evaluated as part of the assessment.

Table 1: Lawson Comfort Criteria

Key	Comfort Category	Threshold	Description
	Sitting	0-4 m/s	Light breezes desired for outdoor restaurants and seating areas where one can read a paper or comfortably sit for long periods
	Standing	4-6 m/s	Gentle breezes acceptable for main building entrances, pick-up/drop-off points and bus stops
	Strolling	6-8 m/s	Moderate breezes that would be appropriate for window shopping and strolling along a city/town centre street, plaza or park
	Walking	8-10 m/s	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
	Uncomfortable	>10 m/s	Winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended

2.3 Strong Winds

In addition, the criteria stipulate two strong wind threshold limits; when winds exceed 15m/s or 20m/s for more than 0.025% of the time (approximately two hours of the year). The lower limit, 15m/s, if exceeded may require remedial measures depending on the sensitivity of the location i.e. is it reasonable to expect an elderly or very young pedestrian to be present at the location? Wind speeds that exceed the 20m/s threshold for more than approximately 2 hours per year would represent a safety risk for all members of the population and would therefore require mitigation to provide an appropriate wind environment.

Strong winds are generally associated with areas which would be classified as acceptable for walking or as uncomfortable. In a mixed-use urban development scheme, walking and uncomfortable conditions would not usually form part of the 'target' wind environment and would usually require mitigation due to pedestrian comfort considerations. This mitigation would also reduce the frequency of, or even eliminate, any strong winds.

It should be noted that the CFD simulations will provide an average expected wind speed for the windiest (typically the winter months - December to February) and summer season in regard to pedestrian comfort. Areas which would have wind conditions suitable for walking use would be likely to have instances of strong winds. As such, professional judgement incorporating RWDI's experience of a large number of similar projects both within the UK and internationally has been applied, informed by the CFD results to identify areas of the Proposed Development likely to have instances of strong winds.

2.4 Desired Pedestrian Activity around the Development

Typically, the target conditions would be:

1. Strolling use during the windiest season on pedestrian thoroughfares (with walking conditions potentially being tolerated in areas where pedestrians would not linger);
2. Standing conditions at entrances, drop off areas or taxi ranks, and bus stops throughout the year;
3. Standing use at private amenity areas where seating is not designated (such as balconies) during the summer season; and
4. Sitting use conditions at outdoor seating and amenity areas during the summer season when these areas are more likely to be frequently used by pedestrians. It is noted that in large mixed-use amenity spaces a mixture of sitting use and standing / entrance use can be considered acceptable as users can choose to sit in 'calmer' areas, with 'windier' areas acceptable for more active pursuits.

The walking classification is avoided because of the association with occasional strong winds, unless they are on a minor pedestrian route or a route where pedestrian access could be controlled in the event of strong winds.

Achieving a sitting classification in the summer usually means that the same location would be acceptable for standing in the windiest season because winds are stronger at this time.

This is considered an acceptable occurrence for the majority of external amenity spaces where sitting is ad hoc and because other factors such as air temperature and precipitation influence people's perceptions about the 'need' to use seating or private amenity in the windiest season.



3 STATEMENT OF LIMITATIONS

This report entitled Pedestrian Level Wind Microclimate Technical Appendix dated October 6th, 2025, was prepared by RWDI for Ikon ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the development described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final design stage to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilise the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

4 ASSUMPTIONS AND LIMITATIONS

The findings included in this report are based on the following information ("Project Data") disclosed to RWDI:

- Model and plan drawings – received 9th September 2025; and
- Cumulative information – received 10th September 2025.

The recommendations and conclusions are based on the following assumptions:

- The Project Data is accurate and complete;
- The Proposed Development, when built, does not deviate substantially from the information listed above. "Substantially" in this case means any change to the exterior form of the buildings that would change the wind flow around it, in a way that would impact pedestrian comfort or safety.
- Sensitive areas of the Site (such as amenity spaces) are expected to be used in line with the temporal specifications set out in the report body.

Any change in the Project Data or Project Specific Conditions not reflected in this report can impact and/or alter the recommendations and conclusions in this report. Therefore, it is incumbent for the Client and/or any other third party relying on the recommendations and conclusions in this report to contact RWDI in the event of any change in the Project Data and Project Specific Conditions in order to determine whether any such change(s) may impact the assumptions upon which the recommendations and conclusions were made.

Finally, the recommendations and conclusions in this report are partially based on historical data and can be affected by a number of external factors, including but not limited to Project design, quality of materials and construction, site conditions, meteorological events, and climate change. As such, the conclusions and recommendations contained in this report do not list every possible outcome.

APPENDIX A: COMPUTATIONAL MODEL

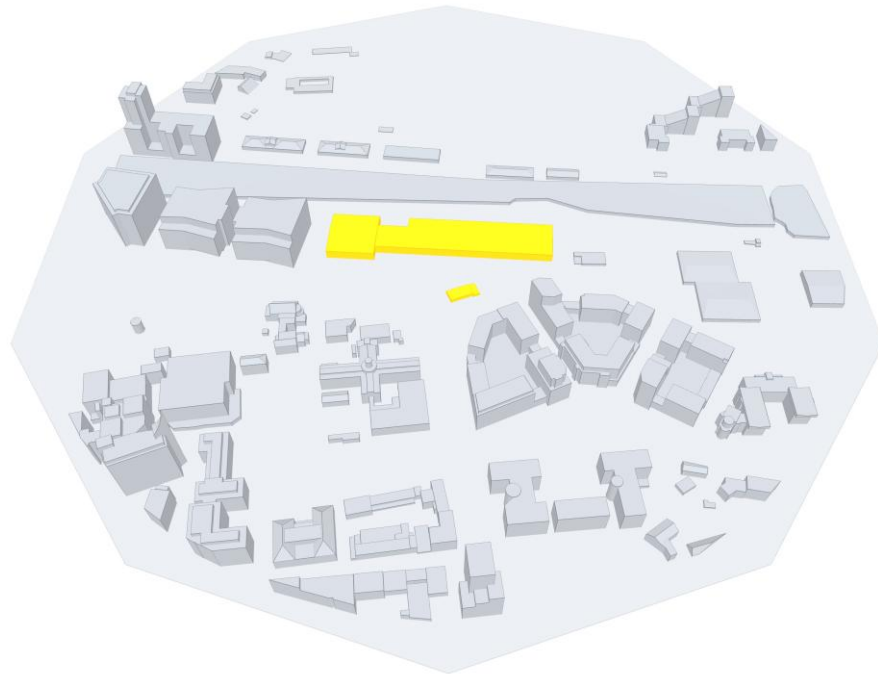


Figure 2 – View of the model (Configuration 1)

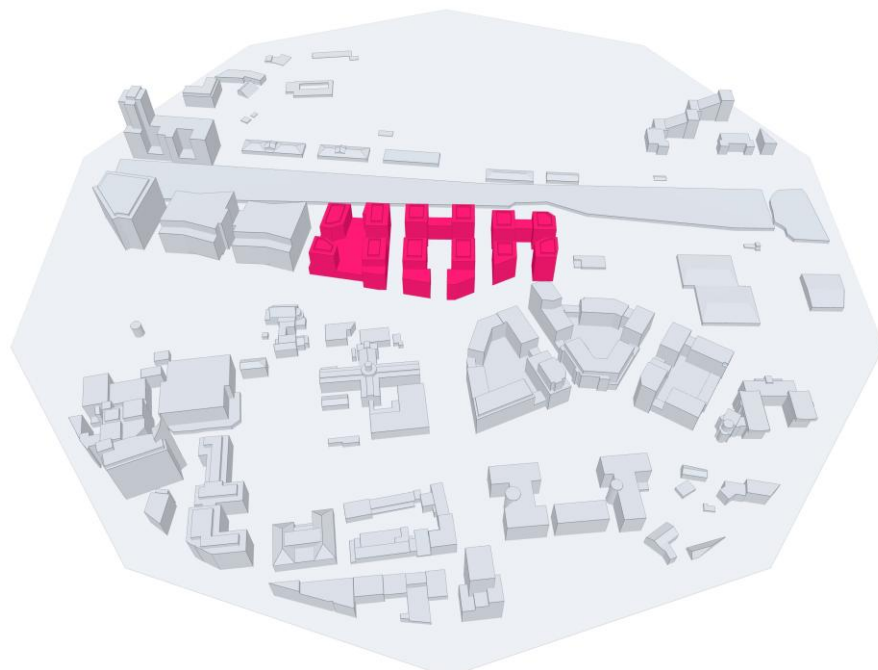


Figure 4 – View of the model (Configuration 2)

Appendix M.1 TVIA Methodology

A TVIA METHODOLOGY

Introduction

The Landscape Institute and the Institute of Environmental Management & Assessment's "Guidelines for Landscape and Visual Impact Assessment" Third Edition (GLVIA 3), 2013, notes in Chapter 1 that landscape and visual impact assessment relates to:

"...the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity"

The methodology employed in carrying out the Townscape and Visual Impact Assessment (TVIA) of the Development has been drawn from guidelines set out in GLVIA 3 and Natural England landscape character and townscape character guidance. The guidelines are not intended as a prescriptive set of rules, and the approach has been adapted to the specific project.

TVIAs are undertaken by professionals who are also typically involved in the design of the landscape and the preparation of subsequent management proposals. This can allow the assessment to proceed as an integral part of the overall scheme design. Judgements are based on training and experience, and supported by clear evidence and reasoned argument.

The purpose of TVIAs is to identify the potential for, and assess the likely effects of change resulting from development. Townscape and visual assessments are separate, although linked, procedures. A distinction is made between:

- townscape - townscape character and the elements and features that contribute to it (townscape receptors); and
- visual - people who experience views within the townscape (visual receptors).

A TVIA is typically accompanied by illustrative material, including baseline mapping and photographs of the Site itself and from the wider context.

There are typically three key stages to TVIA, with a further two optional stages carried out as required:

- Baseline Studies;
- Iterative Design;
- Assessment of Townscape and Visual Effects;
- Cumulative Assessment (should this be required); and
- Night-Time Assessment (should this be required).

Baseline Studies

The purpose of baseline studies is to record the existing townscape features, characteristics, the way the townscape is experienced and potential visual receptors. The following are typically undertaken as part of the baseline studies:

- Identification of the extents of the study area. This is based on professional judgement and may vary depending on the type of development proposed and the context.
- Zone of Theoretical Visibility (ZTV) modelling to assist in identifying potential viewpoints, should this be deemed necessary, dependent on professional judgement of the visual envelope of the Site/Development.
- Identification of potential representative viewpoints within the study area.
- A desktop study of patterns and scale of landform, land use and built development, relevant current planning policy (including landscape designations) and character publications. Further localised character assessments may also be undertaken to supplement published assessments.
- Where such additional assessments are undertaken, these are based on principles set out in published guidance, including the Natural England 2014 publication: An Approach to Landscape Character Assessment. Factors typically considered may include the following, as relevant:
 - Landform and hydrology;
 - Land use and settlement;
 - Pattern/texture/line/scale;
 - Historical development/time depth;
 - Activity/cultural association;
 - Spatial structure and built form;
 - Infrastructure, movement and connectivity;
 - Green Infrastructure;
 - Enclosure/views;
 - Tranquillity and remoteness; and
 - Aesthetic or visual quality.

Where relevant, the future baseline of the Site and its context is also considered, in order to account for ongoing change in the townscape, for example developments that are under construction and which will have altered the townscape context to the Site by the time the Development would be likely to be initiated. For the avoidance of doubt, the future baseline context should not be confused with cumulative effects, which are addressed differently and assessed separately.

Design and Mitigation

TVIAs are undertaken by professionals who are also likely to be involved in the design of the townscape/landscape, site design, and the preparation of subsequent management proposals. The design and assessment stages are iterative, with stages overlapping in part.

Mitigation measures are embedded within the design of the Development (for an outline application this comprises the development parameters) as a result of the desk-based study and field work. These measures, such as the building layout, massing and height; and arrangement of open spaces and new structural planting, are termed 'Primary Mitigation'. Effective Primary Mitigation strategies avoid or reduce adverse effects by ensuring the key principles of the design of the development, as noted above, are sympathetic with the existing baseline.

Additional recommended measures to reduce adverse effects are termed 'Secondary Mitigation.' These may be illustrated in material accompanying the proposal, including the Design and Access Statement.

Typical Secondary Mitigation strategies can include:

- Additional design detail including building materials or landscape design approaches, including indicative species;
- A Landscape and Biodiversity Management Strategy to secure ongoing enhancement of landscape features;
- A Construction Environmental Management Plan to minimise effects arising during the construction process, typically including tree protection in line with BS5837:2012; and
- A programme of appropriate monitoring, agreed with the regulatory authority, so that compliance and effectiveness can be readily monitored and evaluated.

These secondary measures contribute to the assessment of residual effects.

The contribution made by areas of planting introduced as part of the Development is also considered in terms of the effects at year 1 and the residual effects (allowing for growth of planting over time), and the height of this planting for assessment purposes is assumed to be as follows (based on an average growth rate of 1m in 3 years – the rate of growth varies according to species):

- Planting at Year 1: typically 0.7-6.5 metres; and
- Planting at Year 15: typically 5.5-11.5 metres.

In addition, measures may be taken to offset or compensate for adverse effects, if these are not already built into the design proposals. Typical compensation measures are the

replacement of felled trees with new trees or off-site provision of public amenity or access where this may be lost within the Site.

Enhancement

Whilst not specifically related to mitigation, enhancement may be achieved through the Development (e.g. the creation of a new landscape or public amenity/access; enhancement in character or view; or improved management of existing landscape features secured through the Development). The beneficial changes resulting from these measures are incorporated into assessment of townscape and visual effects.

Assessment of Townscape Effects

GLVIA 3 Paragraph 5.1 states that:

"An assessment of landscape effects deals with the effects of change and development on landscape as a resource."

Landscape [townscape] effects occur as a result of changes to the physical fabric of the townscape that may give rise to alterations to its overriding character and how this character is experienced.

The significance of townscape effects is derived from a combination of assessments of the **sensitivity** of the townscape receptor and the **magnitude** of effect experienced as a result of the Development.

Sensitivity of Townscape Receptors

The sensitivity of a townscape receptor is a combination of the **value** of the townscape receptor and the **susceptibility** (in other words 'vulnerability') of the townscape receptor to the type of change proposed, using professional judgement.

Townscape Value

The assessment of value is based on a combination of the importance of landscape-related planning designations and the following attributes (reflecting those set out in GLVIA 3):

- Quality (condition): the measure of the physical state of the townscape. It may include the extent to which typical townscape character is represented in individual areas, the intactness of the townscape and the condition of individual elements;
- Scenic quality: the extent that the townscape receptor appeals to the visual senses;
- Perceptual aspects: the extent that the townscape receptor is recognised for its perceptual qualities (e.g. remoteness or tranquillity);

- Rarity: the presence of unusual elements or features;
- Representativeness: the presence of particularly characteristic features;
- Recreation: the extent that recreational activities contribute to the townscape receptor; and
- Association: the extent that cultural or historical associations contribute to the townscape receptor.

Townscapes, including their character and features, may be designated for their townscape and visual qualities at a range of levels (national, county and local level).

As a matter of principle, all landscapes [townscapes] are considered, as enshrined within the European Landscape Convention (ELC) 2004. The overall value for each landscape receptor is categorised as either High, Medium, or Low (as described below in Table 1.1).

Table 1.1: Townscape Value

Level	Criteria
High	Townscape area of distinctive components and characteristics that may also be nationally designated for scenic beauty. A townscape feature that makes a strong positive contribution to townscape character e.g. a mature tree or woodland.
Medium	Townscape area of common components and characteristics that may be designated at county or borough level for its townscape and visual qualities. A townscape feature that makes some positive contribution to townscape character.
Low	Townscape area/feature of inconsequential components and characteristics, undesignated and with little or no wider recognition of value, although potentially of importance to the local community.

Landscape Susceptibility

The susceptibility of the townscape is a measure of its vulnerability to the type of development proposed, without undue consequences for the maintenance of the baseline situation. Townscape character/features of low susceptibility would have a high capacity to accommodate change, and townscape character/features of high susceptibility would have a low capacity to accommodate change. The following criteria are taken into consideration in the assessment of the susceptibility of townscape character, although not all criteria are equally applicable or important within a given townscape / type of development proposed:

- Landform;
- Pattern/Complexity;
- Composition and landcover;
- Relationship of a given townscape area to the surrounding context and/or to existing settlements or developments; and

- Potential for appropriate mitigation within the context of existing character and guidelines.

With regard to townscape features, susceptibility relates to the potential for loss/retention of the relevant features in relation to the type of development proposed (for example trees within a Site are potentially highly susceptible to construction of an industrial shed, where they might not be to construction of residential units, as the latter provides more scope to mitigate by design); and the facility with which such elements may be replaced, where appropriate.

Susceptibility of townscape character/ features is categorised as High, Medium or Low, as set out in Table 1.2.

Table 1.2: Townscape Susceptibility

Susceptibility	Criteria
High	The receptor is likely to have little scope to accommodate the type of development proposed without undue consequences upon its overall integrity.
Medium	The receptor is likely to have some scope to accommodate the type of development proposed without undue consequences upon its overall integrity.
Low	The receptor is likely to be able to accommodate the type of development proposed with little or no consequences upon its overall integrity.

Based on the combination of value and susceptibility, an assessment of townscape sensitivity is reached, defined as High, Medium or Low. Typically a high value and high susceptibility would result in a high sensitivity; and a low value and low susceptibility would result in low sensitivity.

Townscape Magnitude of Effect

Factors contributing to the scale of townscape change include:

- The extent/proportion of the physical townscape elements that will be altered with reference to their immediate and local/ wider contribution to the townscape;
- The degree to which aesthetic and/or perceptual aspects will be altered; and
- The geographical area that will be directly and indirectly altered.

Factors contributing to the duration the change is experienced in the townscape (including consideration of management plans as appropriate) include:

- Whether the change is wholly reversible or permanent; and
- Whether the change is temporary (and if so, for what period of time).

The townscape magnitude of effect is informed by judgements about the precise nature of the change brought about by the Development both in terms of the existing townscape character and townscape elements / features and the addition of new townscape elements / features, its scale and its duration and reversibility (as described below in Table 1.3).

Table 1.3: Townscape Magnitude of Effect

Magnitude	Criteria
Large	Pronounced change to the existing townscape receptor that may affect an extensive area. The change may be long-term or may be irreversible.
Medium	Partial change to the existing townscape receptor that may affect a relatively extensive area. The change may be medium-term or may be irreversible.
Small	Limited change to the existing townscape receptor that may affect a relatively limited area. The change may be short-term or reversible.
Very Small	Very slight change to the existing townscape receptor that may affect a limited area. The alteration may be short-term or reversible.
None	No change to the existing townscape receptor.

Assessment of Visual Effects

GLVIA 3 Paragraph 6.1 states that:

"An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity."

The significance of visual effects is derived from a combination of assessments of the **sensitivity** of the visual receptor and the **magnitude** of effect experienced as a result of the Development.

Viewpoint Selection

In order to assess the effects on visual receptors, a selection of publicly accessible viewpoints is made. This could include representative viewpoints (e.g. representing views of users of a particular footpath) and specific viewpoints (e.g. a key view from a specific visitor attraction).

Views may be categorised as either near distance, medium distance or long distance with the relevant distances dependant on the size and nature of the development, based on professional judgement.

The type of view is typically described as transient (i.e. experienced when moving) or fixed (i.e. from a static location). It is also described in terms of the degree of screening or openness (e.g. open or uninterrupted; partial (including where partially screened or filtered) by

vegetation or other structures; or curtailed by intervening land form, built form or vegetation) and the angle of view (e.g. frontal or oblique).

Photographs of representative viewpoints are taken at eye level, using a digital SLR camera, and presented with reference to the Landscape Institute TGN 06/19 Visual Representation of development proposals.

Sensitivity of Visual Receptors

The sensitivity of a visual receptor is a consideration of the **value** of the view and the **susceptibility** of the visual receptor, the latter being primarily based on consideration of the extent to which a visual receptor is focused on appreciation of the townscape. Professional judgement is used to determine these factors, based on considerations set out in Table 1.4 and Table 1.5.

Table 1.4: Value of Views

Value	Criteria
High	View of/from a location that is likely to be of national importance, either designated or with national cultural associations.
Medium	View of/from a location that is likely to be of local importance, either designated or with local cultural associations.
Low	View of/from a location that is not designated, with minimal or no cultural associations.

Table 1.5: Susceptibility of Visual Receptor

Susceptibility	Criteria
High	People at their place of residence; People engaged in outdoor recreation, including users of Public Rights of Way (ProW), whose attention is likely to be focused on the landscape; and People travelling along recognised scenic routes or where their appreciation of the view contributes to the amenity experience of their journey.
Medium	People engaged in outdoor sport and recreation, where their appreciation of their surroundings is incidental to their enjoyment; and People travelling on secondary roads or country lanes, rail or other transport routes.
Low	People travelling on major roads. People at their place of work.

The sensitivity of a visual receptor results from the combination of value and susceptibility and is rated as high, medium or low. Typically a high value and high susceptibility would result in a high sensitivity; and a low value and low susceptibility would result in low sensitivity.

Visual Magnitude of Effect

In the evaluation of the effects on views and the visual amenity of the identified receptors, the magnitude of visual effect is typically described with reference to:

- The scale of change in the view with respect to the loss or addition of features in the view and changes in its composition. Factors contributing to this include:
 - The angle of view in relation to the main activity of the receptor;
 - The distance of the viewer from the Proposed Development; and
 - The extent of the area over which the changes would be visible.

Factors contributing to the duration the change is experienced visually in the evaluation of the effects on views and the visual amenity of the identified receptors, the magnitude of visual effect is typically described with reference to:

- Whether or not the view is experienced in fixed or transient views and, in the latter, whether it is intermittent/glimpsed or continuous; and
- The duration of the change, whether temporary or permanent.

The criteria for magnitude of visual effect is set out in Table 1.6.

Table 1.6: Visual Magnitude of Effect

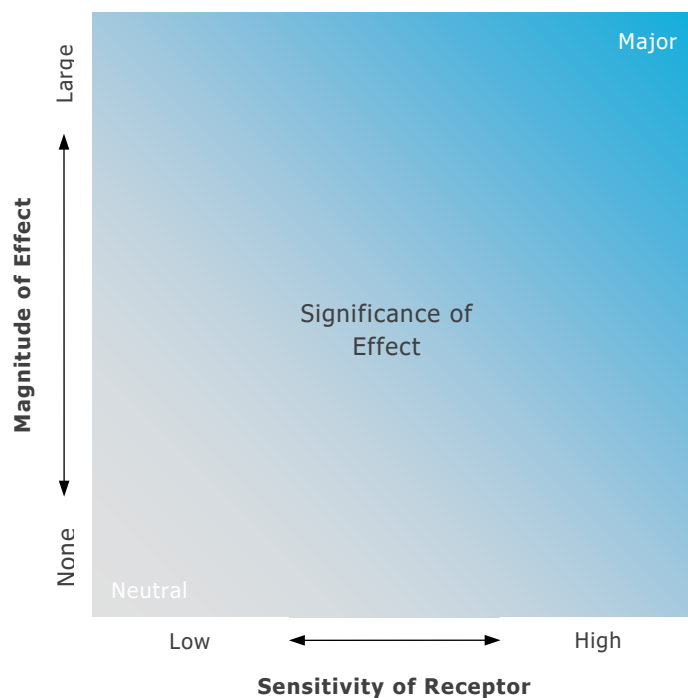
Magnitude	Criteria
Large	The proposals will cause a pronounced change to the existing view, resulting in the loss or addition of features that will substantially alter the composition of the view. The change may be long-term or may be irreversible.
Medium	The proposals will cause a noticeable change in the view, resulting from the loss or addition of features in the view and will noticeably alter the composition of the view. The change may be medium-term or may be irreversible.
Small	The proposals will cause a limited change in the view, which would not materially alter the composition of the view. The change may be short-term or reversible.
Very Small	The proposals will cause a barely perceptible change in the view. The change may be short-term or reversible.
None	No change discernible in the view.

Significance of Effects

In order to draw conclusions about the significance of landscape or visual effects, the combination of the sensitivity of the receptors and the magnitude of effect are considered for the Development at Year 1 of operation; and, depending on the assessment, also at a point where planting associated with the Development will be establishing e.g. Year 15. In certain circumstances, it may also be appropriate to consider effects at construction and on decommissioning of the Development.

The significance of effects are rated on a scale of Neutral to Major. The assessment of significance of effects is subject to professional judgement but in broad terms, where a receptor of High sensitivity experiences a Large magnitude of effect as a result of the Development, the significance of effect is likely to be Major.

Conversely, where a receptor of Low sensitivity experiences a Very Small magnitude of effect as a result of the Development, the significance of effect is likely to be Negligible or Neutral.

Figure 1.1: Significance of Effects

Where it is considered that there is potential for both beneficial and adverse changes, these magnitudes of effect are noted and the balance of these considerations used to inform conclusions on significance of effect.

The assessment of residual effects refers to the likely effects of the Development that will remain once Secondary Mitigation measures are applied and also considers the growth of planting introduced within the Development (including where this is part of Primary or Secondary Mitigation).

For schemes subject to Environmental Impact Assessment, as governed by the Environmental Impact Assessment Directive (2011/92/EU), an assessment of whether or not the effect is considered 'significant' is required. This is relative to each scheme but, in general, effects of Major or Moderate (adverse/beneficial) significance are deemed 'significant'.

Table 1.7: Significance of Townscape Effects – Criteria

Significance	Criteria
Major Beneficial	Alterations that would be substantially characteristic and result in a pronounced improvement of the existing townscape resource. Valued characteristic features would be restored or reintroduced as part of the Development.
Moderate Beneficial	Alterations that result in a partial improvement of the existing townscape resource. Valued characteristic features would be partially restored or reintroduced.
Minor Beneficial	Alterations that result in a limited improvement of the existing townscape resource. Characteristic features would be restored to a limited degree.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing townscape resource, not uncharacteristic within the receiving landscape.
Neutral	Neither beneficial nor adverse effects on the existing townscape resource.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing townscape resource, not uncharacteristic within the receiving landscape.
Minor Adverse	Alterations that result in a limited deterioration of the existing townscape resource. Characteristic features would be lost to a limited degree.
Moderate Adverse	Alterations that result in a partial deterioration of the existing townscape resource. Valued characteristic features would be partially lost.
Major Adverse	Alterations that would be substantially uncharacteristic and result in a pronounced deterioration of the existing townscape resource. Valued characteristic features would be wholly lost.

Table 1.8: Significance of Visual Effects – Criteria

Significance	Criteria
Major Beneficial	Alterations that typically result in a pronounced improvement in the existing view.
Moderate Beneficial	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that typically result in a barely perceptible improvement in the existing view.
Neutral	Neither beneficial nor adverse effects on the existing view.
Negligible Adverse	Alterations that typically result in a barely perceptible deterioration in the existing view.
Minor Adverse	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that typically result in a noticeable deterioration in the existing view.
Major Adverse	Alterations that typically result in a pronounced deterioration in the existing view.

Appendix M.2 Representative Photos – Baseline Photography

MR

L O N D O N



Kings Meadow View
Reading
March 2023



AVR_01 Forbury Road (south)