

VERIFIED VIEW

Technical Methodology for
Accurate Visual Representations

25+

YEARS PRACTICE

Established 1999. Verified views across planning, appeal and inquiry

61

MEGAPIXELS

Sony A7R IV. Enlarges to A0 without geometric loss

±10–15mm

HORIZONTAL / ±15–20 mm VERTICAL

RTK GPS survey range. OSGB36 / OSTN15 coordinate system

3

STANDARDS

LI TGN 06/19, LVMF Appendix C and GLVIA3 simultaneously

LI TGN 06/19 Type 4 (Survey/Scale Verifiable) • LVMF Appendix C • GLVIA3 • RICS Guidelines

This methodology produces LI TGN 06/19 Type 4 (survey/scale verifiable) visualisations — the highest level of locational accuracy and procedural transparency required by the Landscape Institute.

WHAT IS AN AVR?

An Accurate Visual Representation combines surveyed site photography with a precisely geo-referenced 3D model. Unlike marketing CGIs, the geometric inputs are fully documented (camera position, survey coordinates, building geometry) providing an audit trail that can withstand independent scrutiny at planning inquiry.

The term verified refers to the documentation of inputs, not to a post-production check of the final image. What is verified is the data that could be independently confirmed by a competent surveyor: the camera station coordinates, the AOD levels, the reference geometry. The rendering of materials, lighting and vegetation is professional interpretation, rigorous but not independently auditable in the same sense.

"The geometry is documentable. The image is defensible. These are different claims, and we make both honestly."

CLASSIFICATION LEVELS

Level	Representation (LVMF / LI TGN 06/19)	Application
0	Location and size of proposal	Visibility / ZTV assessment
1	Location, size and degree of visibility of proposal	Screening analysis
2	As Level 1 + description of architectural form	Scale and form assessment
3	As Level 2 + use of materials	Full visual impact assessment

LI TGN 06/19 VISUALISATION TYPES

Type	Description	When Required
1	Sketch / CAD, non-photographic	Early consultation
2	Approximate photomontage, no survey control	Pre-application
3	Accurate photomontage, camera-matched, no full topographic survey	Standard submissions
4 ✓	Survey/scale verifiable , full topographic survey, documented methodology, independently auditable	Appeals, inquiry, heritage, contested applications. Construct Media standard.

WHEN AVRS ARE REQUIRED

AVRs are required for major applications in sensitive contexts (tall buildings, heritage settings, Green Belt, AONB, and nationally significant infrastructure) and are standard evidence at appeal and public inquiry. Visualisation effort is always proportionate to the scale, sensitivity and requirements of the competent authority per LI TGN 06/19 §1.3.



AVR LEVEL 0



AVR LEVEL 1



AVR LEVEL 2



AVR LEVEL 3

THE VERIFICATION PROCESS

Every AVR follows a rigorous five-stage workflow. Each stage produces documented evidence that forms part of the final submission package.

01

SITE PHOTOGRAPHY

Full-frame camera mounted at exactly 1.60 m eye height on a calibrated tripod fitted with a panoramic levelling base and nodal slide, recorded in every per-view data sheet. Camera precisely levelled in both axes to prevent converging verticals. Plumb bob marks the ground station directly beneath the lens. RAW capture records full EXIF metadata: date, time, focal length and exposure. Minimum six reference photographs (tripod in situ, survey nail, reference features) taken at each viewpoint to support camera matching. The camera is mounted on a panoramic levelling base and nodal slide. The nodal slide positions the optical center of the lens directly over the surveyed ground point, completely eliminating parallax error during panoramic capture.

02

TOPOGRAPHIC SURVEY

Independent RICS-qualified surveyor records camera station coordinates. RTK GNSS (Geomax Zenith 60) achieves ± 10 to 15 mm horizontal and ± 15 to 20 mm vertical under normal conditions. Total station reflectorless EDM achieves ± 5 mm where higher accuracy is required. Camera height recorded to Ordnance Datum Newlyn. Minimum eight identifiable ground control points surveyed. Coordinate system: OSGB36 / OSTN15.

03

3D MODEL PREPARATION

Proposed development modelled from architect-issued CAD or BIM data. Model geo-referenced to OS coordinates. Existing context modelled or sourced from verified base data. AOD levels confirmed in writing with project architect before rendering commences.

04

CAMERA MATCHING

Virtual camera aligned to surveyed station. Focal length, sensor dimensions, and principal point set to match physical camera. Lens distortion mathematically corrected prior to matching to remove barrel or pincushion distortion artefacts. Reference point markers placed at surveyed coordinates and iteratively refined until overlay with photograph is confirmed. Alignment overlay retained as permanent record.

05

RENDERING & COMPOSITING

Scene rendered with accurate solar position calculated using precise astronomical algorithms based on date, time, exact geographic coordinates, and True North alignment (Grid North translated from OSGB36). Foreground elements masked non-destructively. All layers retained. Final composite reviewed by second team member before release. Methodology statement compiled for submission.

VERIFIED VIEW SEQUENCE

The sequence below shows a complete verified view from a live planning commission: existing photograph, camera match with surveyed reference points, and finished AVR. Insert your project images below by replacing the placeholder text.



Site photograph taken at surveyed camera station. Sony A7R IV, Canon TS-E 24mm f/3.5L, 1.60m eye height.

01 EXISTING CONDITION



Red markers placed at surveyed OSGB36 coordinates in the 3D model. Each must align precisely with its counterpart in the photograph before rendering is approved.

02 CAMERA MATCH: REFERENCE POINTS



Rendered proposal composited into the verified photograph. Position, scale and massing grounded in survey data. Visual character represents professional interpretation from architect-issued information.

03 FINISHED AVR: PROPOSED DEVELOPMENT

TECHNICAL SPECIFICATION

PHOTOGRAPHY EQUIPMENT

Camera Body	Sony ILCE-7RIV (A7R IV) <i>61.0MP · BSI CMOS · Primary survey camera</i>
Lens Adapter	Metabones Sony to Canon adapter
Primary Lenses:	Canon EF 50mm f/1.4 USM (The LI TGN 06/19 benchmark) <i>39.6° HFOV · LI TGN 06/19 benchmark, minimal distortion</i> Canon TS-E 24mm F/3.5L (Tilt-shift for urban/constrained views) <i>73.7° HFOV · Primary AVR lens (justified per view)</i> Canon TS-E 17mm f/4L <i>93.3° HFOV · Constrained viewpoints (justified per view)</i>
Tripod & Support:	Innorel RT85C Carbon Fibre Legs
Panoramic & Nodal Rig	Fanotec EZ-Leveller II (Panoramic Leveller) Koolehaoda Pan 60 (Panoramic head) Leftfoto NNR-200 Nodal Slide (Eliminates parallax error) Arca Swiss plate

SURVEY EQUIPMENT

RTK GNSS / Smart Antenna	Geomax Zenith 60 (utilizing Pronet for GNSS corrections)
Total Stations:	Geomax Zoom 90 Trimble S7

3D & POST-PRODUCTION PIPELINE (SOFTWARE)

Camera Matching & 3D Modeling	Autodesk 3ds Max
Lighting & Rendering	Chaos Corona
Post-Production	Adobe Photoshop

LENS SELECTION & FIELD OF VIEW

Lens selection follows LI TGN 06/19, which identifies the 50 mm prime lens (39.6° HFOV) as the benchmark for minimal distortion and maximum verifiability. Wider tilt-shift lenses are used only where the full proposed height cannot be captured on 50 mm. Tilt-shift optics maintain two-point perspective while preventing vertical convergence that would otherwise distort apparent building height. Each lens choice is justified in the per-view technical data sheet and agreed with the competent authority.

Lens	HFOV	Application
Canon EF 50mm f/1.4 USM	39.6°	TGN 06/19 preferred , minimal distortion, maximum verifiability
Canon TS-E 24mm f/3.5L	73.7°	Urban / constrained, justified per view, agreed with competent authority
Canon TS-E 17mm f/4L	93.3°	Very constrained, justified per view, agreed with competent authority

ACCURACY & LIMITATIONS

An AVR produced under this methodology provides a reliable and defensible basis for planning assessment. Its accuracy operates differently across different elements of the image, and understanding that distinction matters.

WHAT "VERIFIED" ACTUALLY MEANS

Verification applies to the documentation of inputs, not to a post-production audit of the final rendered image. The camera position, survey coordinates and building geometry are recorded with sufficient precision and transparency that they could be independently confirmed by a competent surveyor. In practice, no independent re-survey takes place; the methodology is auditable, not the output.

"What is verified is the data. What is represented is the image. These are related, but not the same thing."

WHAT CAN AND CANNOT BE VERIFIED

Element	Status	Basis
Camera station position	Verifiable	OSGB36 coordinates, ±10–15 mm horizontal / ±15–20 mm vertical RTK GNSS
Camera height to OD	Verifiable	Height to OD Newlyn from survey
Building geometry	Verifiable	Derived from architect-issued CAD/BIM
AOD levels	Verifiable	Recorded from survey, confirmed with architect
Shadow geometry	Verifiable	Calculated using precise astronomical algorithms based on date, time, exact geographic coordinates (lat/long), and True North alignment (Grid North translated from OSGB36)
Material finishes	Interpretive	Approximated from specification documents
Lighting / sky conditions	Interpretive	Matched to photograph; future conditions modelled
Vegetation / landscaping	Interpretive	Modelled to reasonable accuracy; not surveyed
Existing trees / canopy	Interpretive	Modelled from survey, LiDAR or aerial data where available; seasonal foliage noted

QUALITY ASSURANCE & DELIVERABLES

SECONDARY REVIEW	Camera matching independently verified by a second qualified team member before any compositing proceeds.
ARCHIVAL RECORD	Alignment overlay (with red surveyed reference markers) retained as permanent verification evidence. Available alongside raw survey data to planning authority or Inspector on request.
ARCHITECT SIGN-OFF	3D model position and AOD height confirmed in writing with project architect before rendering commences.
METHODOLOGY STATEMENT	Full LI TGN 06/19 Type 4 methodology statement accompanies every AVR submission, compliant with all applicable guidance.

STANDARD DELIVERABLES

- Verified view images, existing and proposed conditions at each viewpoint
- Viewpoint location plans with 12-digit OS grid references
- Camera data schedule, coordinates, bearing, lens, HFOV, date and time
- Survey data summary with accuracy statement and coordinate system
- Per-view technical data sheet: 12-digit OS grid reference, camera height (m AOD), lens, exact HFOV, date/time, survey accuracy statement, and camera-matching confirmation
- Full methodology statement (LI TGN 06/19 Type 4, inquiry-ready)
- Wireline overlays and cumulative scheme views where required

COMMISSION A STUDY

Construct Media has delivered LI TGN 06/19 Type 4 verified views for planning applications, appeals and public inquiries across the UK for over 25 years. We work with architects, planning consultants, developers and legal teams. Every commission includes full documentation and an inquiry-ready methodology statement.

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