Clarifications - Tender 179/2024/25

	Question from Tenderer	Answer from CCT
1	Stirrup for luminaires – Is 3CR12 stainless steel required – this is covered on page 138, 2.5 (c) – the industry norm is galvanised steel. If you use a 3CR12 bracket and fix it against a galvanised steel member it may in time cause galvanic corrosion which will weaken the bracket and be counter productive to the intention of longer lifetime.	The specification requires 3CR12 stainless steel for the luminaire stirrups to enhance long-term durability and corrosion resistance, particularly in the challenging coastal environment. While galvanised steel is the industry norm, 3CR12 has been considered due to its improved resistance to corrosion-related degradation over time, and its relatively similar cost impact. To address concerns regarding galvanic corrosion when in contact with galvanised steel members, suitable isolation methods—such as neoprene washers, plastic spacers, or appropriate barrier coatings—should be implemented to prevent direct metal-to-metal contact and ensure longevity of the bracket system - and is considered sound engineering practice. It is important to note that even if the stirrups were galvanised steel, an appropriate washer or isolator would still be required to prevent movement between components from degrading the zinc layer, which could accelerate corrosion. This is why a structural engineer must perform the design, ensuring that the solution is adequate by considering: Wind loads and their effect on the brackets, - Bracing and movement allowances, - The correct selection and placement of washers and isolators, which are part of sound engineering practice to maintain structural integrity over time. This approach ensures both corrosion resistance and mechanical stability while [illegible]
2	The lumen efficacy as specified, i.e. 120 – 180lm/W - page 135. 2.2.7.b - is this applicable to the field lighting only or all lighting, including the colour changing Auxiliary lights	The specified luminous efficacy range of 120-180 lm/W is primarily intended for the field lighting (floodlights), as these are the most energy-intensive components of the lighting system. Given their significant contribution to overall power consumption, ensuring high efficiency is essential for energy savings and performance. For auxiliary lighting, the emphasis remains on achieving the highest practical efficacy while ensuring compliance with functional, aesthetic, and operational requirements. As auxiliary lighting has a comparatively lower energy demand, the same stringent efficacy requirement may not be as critical, provided that overall system efficiency and design intent are maintained.
3	The dimensions of the cavity fitted luminaires and their cavity size – is this indicated on the drawings or to be measured on-site inspection	This can be confirmed during the site inspection
4	Are the auxiliary colour changing luminaires required to be individually controlled or by group protocols? The field floodlights will be individually controlled. **2.9 Lighting Control Systems** a) A DMX enabled lighting control HMI must be installed in the stadium VOC. b) The control system must have seven pre-programmed modes for the floodlights, corresponding to the seven lighting levels defined in section 2.2.2. c) Control of the Façade lights, Upper Ring Pojector Lights, Roof Glow Lights (A) and (B) , Roof Lights and Stand Lights – must be programmed indepndent from the floodlights, with options to control them as a group.	The intent behind integrating the auxiliary lighting with the DMX panel is to enhance control flexibility, allowing for improved scene management and potential dynamic effects, while ensuring that the lighting remains functional for its intended purpose. We do not wish to prescribe a specific approach, but it is important that the tenderer clearly explains their chosen solution, including the capabilities of their proposed system. Since these solutions are not standard and would be proposed by the tender based on their specific technologies. The tenderer must outline how their proposed system will function, what level of control will be possible, and how it aligns with the overall lighting objectives and what capabilities it will have, include the compliance, and energy efficiency considerations.
5	Stand Lights as mentioned in BOQ pg. 93 – Stand Lights Integration – are the installed luminaires DMX ready ? b) **Auxiliary Lighting Upgrades** The scope includes replacing the façade lights, upper ring projector lights, roof glow lights (Type A and B), ring of fire lights, and integrating recently upgraded stand lights into the control system. All auxiliary lights will feature dynamic colour-changing capabilities controlled via a centralised Human-Machine Interface (HMI). Table 7: Existing Stand Lights Specification *Above mentioned table information not available at the time of tender, tenderer needs to include these lights as part of the integration portion **NOT** to be replaced.	The existing stand lights have already been replaced with LED fixtures, which consume less energy and improve efficiency. These lights are not DMX-ready and are currently controlled via a relay from the Intelibus system. To avoid unnecessary expenditure on replacing recently installed lights, the tenderer shall propose a solution to integrate these lights with the control system. Solutions such as DMX relay switches or other suitable interface devices may be considered to enable compatibility, provided they meet the operational and functional requirements of the system.
6	There is contradiction between the glare evaluation height of 1.75m and the horizontal & vertical illuminance testing height of 1m - **2.2.6 Glare** Glare is the visual sensation resulting from excessive luminance levels within the field of vision. When the luminance is significantly higher than what the eyes are accustomed to, it can lead to feelings of annoyance, discomfort, and diminished visibility. a) The lighting design must ensure the new floodlight system does not create an undue amount of glare for players, competitors, spectators, or officials. This applies equally to camera positions within the stadium to prevent lens flare, which should be minimized and in accordance with section 2.2.2. b) The methodology for assessing the glare effects of a light source or a group of lights should adhere to the guidelines outlined in CIE 112. c) The lighting system's design must incorporate a glare assessment based on CIE 112. d) The evaluations need to be conducted at 15° intervals, covering a full 360°. Observer positions must be situated at a height of 1.75 meters above the pitch surface. e) Both the maximum glare rating and the corresponding direction for each observer position must be defined and documented as part of the design and tested during commissioning. **2.10.5 Floodlight Testing** a) The floodlight testing procedure must provide assurance that all the technical requirements related to the floodlights, as specified in this specification has been met. b) The illuminance tests must adhere to the standards outlined in EN 12193. c) The chosen grid size for testing will be based on the dimensions of a soccer pitch, specifically 68m x 105m. d) To facilitate comprehensive testing, a grid comprising of 96 points will be utilized. e) At each of these designated points, illuminance tests will be conducted. These tests will encompass measurements of both horizontal and vertical illuminance, considering four distinct angles namely 0°, 90°, 180°, and 270°. f) In total, the testing procedure will necessitate the execution of 480 illuminance tests. g) For the horizontal illuminance measurements, the meter will be positioned at a height of 1m in an upward direction. h) For the vertical illuminance tests, the meter must be positioned perpendicular to the pitch, 1m above the surface. It will then be rotated to four angles: 0°, 90°, 180°, and 270°. i) The meter employed in these tests must be calibrated, with the calibration certificate not exceeding one month in age. j) The testing procedure must include measurements for the Maximum Flicker Factor, to evaluate the potential for rapid illuminance fluctuations. k) To evaluate the Maximum Flicker Factor, a specialized 12-point flicker factor test must be conducted. This entails taking readings at specific points (predefined and agreed with the Employer) distributed throughout the stadium. These readings must be captured at a height of 1m along the 90° and 270° planes, in accordance with industry standards. - The test must also include readings of; - Average Flicker Factor - Glare rating - Colour Rendering - Colour Temperature	The specified heights for glare evaluation (1.75m) and illuminance testing (1m) serve distinct purposes and should not be seen as contradictory, these requirements are from the various reference requirements as listed in the tender. Section 2.2.6(d) – Glare Evaluation Height (1.75m): This height is chosen to simulate the typical eye level of spectators and players, ensuring that glare assessments accurately reflect real-world viewing conditions. Section 2.10.5(g) & (h) – Horizontal & Vertical Illuminance Testing (1m): These measurements are taken at 1m above the ground as this is the standard height for assessing lighting uniformity and performance on the playing surface as per industry norms. Since glare and illuminance measurements have different evaluation criteria, the use of different heights is intentional and appropriate for their respective purposes. The tenderer should ensure that both tests are conducted as specified to maintain compliance with the performance requirements.
7	In the tender invitation, your office made it clear that bids would be evaluated based on functionality due to the technical nature of the required skills. Specifically, under item C.2.1.4.3 – NO 1.2, which addresses functionality, the evaluation criteria focus on previous experience related to floodlight replacement. The tender, in summation, stipulates that bidders who meet this requirement could be awarded up to 10 points for functionality: "*Provide copies of Completion Certificates of all Floodlight Replacement and control system upgrade projects where the total implementation work undertaken each exceeded a value of R5m (Five million rand) per installation respectively, which were completed during the last 5 years.*" It is understood that the purpose of the functionality scoring is to procure contractors who possess the necessary skills, technical knowledge, and capabilities to deliver the goods and services required for the completion of the project. However, we have concerns regarding the criteria used to allocate functionality points, specifically the requirement that proof of relevant works must be related to works done within the last five years. We believe this criterion is not applicable to the scope of work required for this project.	The section will be amendment to read: 1.2) "Provide copies of Completion Certificates of all Floodlight Replacement and control system upgrade projects where the total implementation work undertaken each exceeded a value of R5m (Five million rand) per installation respectively".
	Prepared by:	Reviewed by:
	Huibré van der Merwe Digitally signed by Huibré van der Merwe Date: 2025.02.28 09:08:09 +02'00'	Allen Pietersen Digitally signed by Allen Pietersen Date: 2025.02.28 09:22:12 +02'00' Allen Pietersen Werner van Geer