

Our ref: 25.1.201/IB/3272

13 August 2009

tie limited
CityPoint
65 Haymarket Terrace
Edinburgh
EH12 5HD

Bilfinger Berger Civil EDI	
Date Sent	13 AUG 2009 BRW
File Number	
Action	
Distribution	

Bilfinger Berger-Siemens- CAF Consortium

Lochside House
3 Lochside Way
Edinburgh Park
Edinburgh
EH12 9DT
United Kingdom

Phone: 

For the attention of Steven Bell

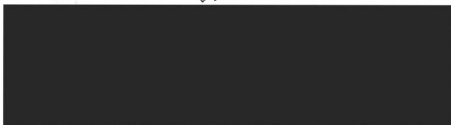
Dear Sirs,

**Edinburgh Tram Network Infraco
Operational Design Review (ODR) Actions – Comments Received from SDS**

Please find enclosed the Operational Design Review (ODR) Action Register. Following the submission of Client letter INF CORR 1737/AG, with the ODR Action Register attached, the register was submitted to SDS for comment/progress on their actions on 20/07/09. Please find attached to this letter the Action Register with the SDS comments.

Attachments: ODR Action Register – SDS Comments

Yours faithfully,



Martin Foerder
Project Director
Bilfinger Berger Siemens CAF Consortium

SRo, SNe



Sec	Ref	Issue identified at CDR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	20th June 2009 Meeting notes (ie)	Action	BSC Comments 16-07-09	SDS Response
1A	11-1.1	Ocean Terminal - The current design drawings (in particular the planning drawings for prior approval) do not show the required operational signage or point position indicators that will be required around the Ocean Terminal area	Location of point position indicators heads and operational signage along the route to be determined	BSC	Open	Operational signage by Transdev. Planning drawings not for construction	(1)Operational signage is not being supplied by Transdev however we are willing to advise on the specification and positioning. (1)Which set of drawings show the location of all point position indicators as required. Siemens Sicas S7 show the location of point indicators at Haymarket, Newhaven, Ocean Terminal, Depot exit/entry and Airport. Drawings required for Shandwick place, Loth Walk, Edinburgh Park and York Place.	BSC/SDS to discuss	SDS	SDS to confirm what Drawings the point position indicators are shown	Drawing ULE90130-SW-SCC-00031 with key items details on ULE90130-SW-SCC-00030 Further developed drawing by Siemens is ETN-01-SIG-OCT
1A	11-2.1	Newhaven Transstop - What is the overrun protection arrangement proposed for Newhaven transstop at the terminating tracks? It is assumed that a short planted sand drag would be provided like the arrangement on Wolverhampton St Georges terminus Midland Metro (see figure 1). What is the basis for determination of the type of overrun protection arrangements to be proposed for this location? (RSP2 guideline 14)	SDS confirmed during the Preferred bidder technical due diligence/VE meeting for Trackform on the 20/11/2007, item 3.9 'SDS noted that buffers are no longer required and simple sand drag will be used as required'. Current drawing ULE90130-01-STP-00005 v3 shows an area for overrun, there isn't a design for a sand drag included. Confirm whether a sand drag is to be included in design or if not the rationale for any alternative	BSC (SDS)	Open	As previous, not shown in IFC design. Discussed with HMR and deemed that a track overrun facility is satisfactory with no sand trap (or similar).	Rationale for design solution considering the risks required to support decision and input to evidence file	BSC/SDS to discuss	SDS	SDS to confirm design of overrun protection arrangement for Newhaven Transstop provide proposed submission date.	Report detailing terminus facility issued to BSC.
1A	11-2.4	Ocean Drive - we believe the hoarding along Ocean Drive will be retained but may be removed at a future date. A footpath constructed in conjunction with development of the area behind the hoarding. Consideration should be given to whether it may be beneficial to construct a footpath as part of the tram project as any future construction work near to the operational tramway may be subject to restrictions. The land at present is outside of the LOD.	This is a third party issue being dealt with by Alastair Sim (ie)	tie	open			Action with tie	tie	No comment	
1A	11-2.6	Design Speed - There are locations where the design speed drops below the maximum nominal speed due to the track geometry. For example; from chainage 101300 to 101600 the speed varies between 25kph and 40kph. What would be the effect of increasing the speed in this and other sections in order to maintain a more consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SP4-0009 v3 and hence related to passenger comfort rather than safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions, geometric, sighting and third party requirements. Completion required prior to shallow running.	BSC (SDS)	open			SDS has in hand through their Hazard Log closure process	SDS	Covered by Hazard log close out process	Being addressed via hazard log process

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	23rd June 2019 meeting notes (tie)	23rd June 2019 meeting notes (tie)	Action	BSC Comments 16-07-09	SDS Response
1A	11-2.7	Foot of the Walk tramstop - How is it envisaged that the no overtaking at the tramstop bus restriction will be imposed?	Safety issue - to be incorporated into the risk register/hazard log	us	open	Operational issue - requirement of the driver training.	issue was in relation to bus drivers overtaking stationary trams we believe this is a restriction imposed by the design has this been communicated to and accepted by the bus contractor	Action with tie	OK - confirmed	tie	No comment	
1A	11-2.8	Foot of the Walk - Is there adequate footage access at the platform looking west to allow for clearing of the windows directly behind the shelter?	Design issue - to be confirmed	BSC (SDS)	open	T&C - depends on method of cleaning		SDS said that there is an ambition and that the busmakers window cleaner's long pole system will still be usable	Images submitted in case do not show the clearance from the shelter to the walk. Custom confirmed that there is not space to carry the cleaning pole (check at TA comment #121)	SDS	SDS to confirm clearance between tramstop shelter and wall	No glass points to rear of shelter. Sufficient space to accommodate window cleaning.
1A	11-2.9	Foot of the Walk - How have the interchange requirements at this tramstop and in the surrounding area been incorporated into the design, e.g. integration of bus information with train information, location of bus/train information, bus tracker, passenger queue lines between sections etc.	Passenger queue lines have been taken into consideration however the location and format of display of bus & train information is still outstanding. A specification for each interchange point is required	tie/TEL	open			Action with tie/TEL	TEL have provided an information on the bus stop location. Details of the measures and signage at the tramstop have not been confirmed	tie	No comment	
1A	11-2.10	Foot of the Walk - Will the lighting provision on the platform be adequate to provide 30lux along each platform? Maybe additional or relocation of fixtures could be considered due to the location of this platform and due to its interchange requirements.	Lighting level drawings have been produced by SDS. Compliance with ER's to be checked	TEL	open	Lighting confirmed as adequate	Good, however we cannot find the lighting level drawings which were referred to in workshop	SDS will verify that 30 lux is the designed lighting level	CEC have raised an objection to proposed lighting installation of lighting levels noted in TA comment #1002	SDS	SDS to demonstrate that lighting levels are adequate. Verify that 30 lux is the designed lighting level.	Average lighting level of 20 lux achieved at FootW in place of standard 25 lux (average). Due to prohibition from attaching lighting points to east side properly.
1A	11-5.1	The collection of communal bins along Constitution Street may have potential impact on the tram operations - procedures for refuse collection need to be addressed with CEC	CEC to provide information on collection of communal waste. Trade waste may be an issue, this could be addressed in the TRO's	CEC	Open	Locations have been considered. Operational issue (Transdev/BSC)	Please note action with CEC	Action with CEC	Bin locations have been considered as part of the TRO. CEC to look at collecting these off beat	CEC	No comment	
1B	02-1.2	No warning signs are provided for drivers turning left from Duke Street that there is a tram only lane on Leith Walk. Further information is also required on the signage philosophy taken on all tram only roads	Design issue linked to CEC approvals for section 1B	BSC (SDS)	open			No standard sign exists for this unusual situation. CEC said "leave as designed by SDS"	Signs proposed by SDS reviewed and approved. Sign to be provided. Could be reviewed after construction	TEL	TEL to review prior to or as part of operational stage	
1B	02-2.2	Visibility of a vehicle turning left from Duke Street into Leith Walk to a tram driver heading north waiting on the Leith Walk stop line of that junction. It is difficult to assess from the drawing however it is felt that visibility may be partially restricted. Has consideration been given to visibility at this location, improvements to visibility could be made by providing additional aid to the driver to observe vehicles turning left onto Leith Walk	To be assessed during testing & Commissioning	TSL	open			To be assessed by tie/TEL during T&C	CEC feel that visibility should be sufficient for general traffic as they see in the corner of the road. Any future requirements will need discussion with planning	tie	tie to assess with TEL during T&C	
1B	02-2.3	Effect of collection of communal bins along Leith Walk. Has this been considered in the design or is this an operational issue. If this is an operational issue what impact will this have: how frequent is collection, how long does it take and where are the bins located at present?	CEC to provide information on collection of communal waste. Trade waste may be an issue, this could be addressed in the TRO's	CEC	Open	Locations have been considered. Operational Issue (Transdev/CEC)	Please note action with CEC	Action with CEC	CEC have the control over communal waste collection. This is being dealt with in the TRO and will be an enforcement issue	CEC	No comment	

TIE00505319_0004

Sec	Ref	Issue identified at QDR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	13th June 2015 meeting minutes	13th June 2015 meeting minutes	Action	BSC Comments	SDS Response
1C	03-1.2	York Place/Elder Street Junction - At present there is queuing in the York Place right turn lane into Elder Street for St James Centre car park, mainly if the car park is full. This will impact on the tram's ability to proceed along York Place if it is stuck behind queuing traffic. A potential solution is to remove the current separate bus lane providing a separate lane for right turns, a lane for straight ahead (bus and general traffic) and therefore keeping the tram lane tram only. The bus lane could then restart east of Elder Street junction.	Design issue - impact to be assessed at next phase of junction modelling	BSC (SDS)	Open	This has been previously proposed and rejected. Advice to date from CEC is that this is not acceptable in traffic terms. This is a CEC decision if they wish to compromise traffic operations in favour of tram at this location. Action to be the CEC for change.	Okay if the CEC accept action	CEC noted that the design has to be acceptable. Post-meeting now the design of this junction will be considered together with the Piccadilly Place design.	Proposing outputs highlight the problem at this location. As such, raised to be investigated prior to 13th June 2015. CEC to advise SDS.	CEC	CEC to provide comments to SDS as soon as possible	
1C	03-2.1	Annapdale Street/Montgomery Street Junction 23 - Although the reason for a stop line in between the 2 yellow boxes is understood, a tram would be unable to stop on the line and clear the yellow box junction. In order to avoid this situation confirmation is required that the signalling logic will prevent the tram signal going to stop before the tram clears this junction.	Traffic signalling logic to be confirmed	tie	Open	Confirm logic requirement so it can be configured	Please confirm if the signal logic is configured so that a tram will not be stopped on the yellow box junction at the stop line in front of signal heads U and S	Action with tie	Full signal controller configuration file required including software with tram logic. CEC to have an information on this.	tie	No comment	
1C	03-2.2	St Andrew Square - Further details required of the materials and finishing proposed for St Andrew Square.	Design to be finalised	BSC (SDS)	Open	This is not an operational issue - contrasting materials and markers used as per previous discussions. Materials are shown on drawings and within Appendix 11/1	Agree that the materials in isolation are not an operational issue however the tram environment, demarcation, markings and how these are perceived by tram drivers and members of the public is of operational interest, hence the question as of time of review this was not clear	Drawing submitted to CEC for approval: showed yellow marker blocks - shown on the roads drawings	CEC require further visibility of this proposal, once specific items are selected	SDS	SDS to submit final design for approval.	Design to be submitted, as noted by BSC.
1C	03-2.3	Tram path marking - What material is proposed to mark the tramway path and how will the tram path markings be incorporated into the different proposed surfacing, as an example the yellow dots shown in the drawings for St Andrew Square integrated with granite sets. The same issue could be raised for all sections, therefore it would be preferred if the response covered materials used throughout the system. Has consideration also been given to whether the tram path marking in some areas are also for the benefit of pedestrians, and in these location providing a marking which can be perceived by the visually impaired, for example a slightly raised surface.	system wide design issue - to be finalised	BSC (SDS)	Open	Discussions have been to use markers set on to the sets. Contrasting colours for sets also to be used.	Await design submission	Drawing submitted to CEC for approval: showed yellow marker blocks - shown on the roads drawings	CEC require further visibility of this proposal, once specific items are selected	SDS	SDS to submit final design for approval	Design to be submitted, as noted by BSC
1D	01-2.1	Taxi rank in the area at the front of the station - further information is required as to how this will be signed, controlled and managed.	How this will be managed is still to be determined	CEC	Open	Not BSC scope	Yes, action with CEC	Action with CEC	Prior to tram this space was private and not licensed by CEC. The proposal is to allow this area and license the space. Enforcement to be assessed	CEC	No comment	

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	Word same 2009 meeting notes (ie)	Action	BSC Comments 16-07-09	SDS Response	
2A	08-1.1	Haymarket city based platform -- As this is a major interchange point careful consideration needs to be given to the location and provision of bus and tram information on passenger information screens. We suggest that an additional information display is placed at the east of the platform which would allow passengers emerging from the station intending to use public transport to head into the city to see whether it would be better to catch a tram at the platform or cross the road and catch a bus. It would also prevent congregation of passengers around the information displays located near the shelters in the middle of the platform.	A specification for each interchange station is required detailing requirements for any additional passenger information displays.	Tilt	Open			Action with Tilt	Letter from the date of Tilt details of this. Comments have not been reviewed to Station comments raised at TA. Revised design will be submitted to the SA C&D comments when available. Review with C&D to be completed shortly.	CEL	No comment	
2A	08-1.2	Demarcation of the tram only section prior to Haymarket yard Turnback - there is a concern that vehicles may stray into the tram only area and enter the segregated section, if the trackform in this section is ballasted (BSC proposal) then this would cause major disruption to the service. The current drawings show that this area is embedded concrete with a kerb line with no entry signs and tram only markings. We suggest using pedestrian deterring paving to demarcate the pedestrian section from the segregated tramway will help to deter pedestrians and also stray vehicles.	Demarcation to be provided of footway and surfacing in this area	tie	Open	Any change from previously issued designs to be instructed.	(1) From BSC location of designated trackforms drawing the transition from Rheda City C/D to direct fixation is west of the tram only section. It also seems from the road scheme layout plan that this tram only area will be a crossing point for pedestrians. Is this correct? (2) What is the surfacing being applied to the Rheda City track in the tram only area (3) Has consideration been given to deter pedestrian from the transition between Rheda City and Direct fixation.	CEC said that pedestrian deterring paving is required - plus she had been told that it will be. SDS to confirm that this is indeed the case.	CEC said that pedestrian deterring paving is required. Additional pedestrian crossing has been added since TA increasing the risk of pedestrians crossing here.	SDS	SDS to review with CEC and advise impact on design and justification if deemed a change	In process of being reviewed with full response to follow.
2A	08-1.4	Roseburn delta junction landscaping -- we note that the planting mix within the delta contains Corylus Avellana (Hazel) and Tilia X Europaea (Common Lime), the common lime can grow to 60-90ft. We suggest that the vegetation within this area is kept at a low level to protect visibility. This comment has been made previously ROR on Haymarket yards section 2 prior approval documentation	Also possible issue with rail adhesion. Reasoning for large trees in this area to be clarified	BSC (SDS)	Open	This is a change as approvals granted, and will require resubmission to CEC.	If built intervisibility across the junction will be required if the system is to operate on line of sight	Notwithstanding the CEC design this is a potential safety and operability issue SDS design to be amended to show massive trees retained by appropriate low-level planting scheme. BSC/SDS to notify me of the costs of this change	Notes that any change to landscaping will require approval of the Landscaping & Habitat Management Plan and should be done in consultation with Planning	BSC	BSC will provide estimate to be. Have requested estimate for SDS and will validate prior to issue to tie for consideration	
2A	08-1.5	Crew relief facility -- we suggest providing adequate external lighting at the crew relief facility and also a CCTV camera. These are requested due to concerns for staff security particularly those carrying money using the crew relief facility.	Crew security covered by entry in hazard log	BSC	Open	Change to be instructed if required. Additional submits to NWR and CFC potentially.	Will be closed if Hazard log entry ref 282 amended to include security of staff at the crew relief facility as well as on trainstops	A letter will be sent to BSC asking for a quote for this	No comment	tie	Letter to be sent to BSC requesting quote for additional requirements.	

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	22nd June 2018 meeting notes (if any)	Comments	Action	BSC Comments 16-07-09	SDS Response
2A	08-2.1	There are locations where the design speed drops below the maximum nominal speed due to the track geometry (excluding locations through tight curves or transstops). For example, at change 200530 the speed drops from 60kph to 40kph. What would be the effect of increasing the design speed in this section in order to maintain a consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant efficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3. We would expect a schedule of the reasons for each design limit to be produced as part of the H&S file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions, geometric, sighting and third party requirements. Completion required prior to shadow running.	BSC (SDS)	open			SDS has in hand through their Hazard Log closure process	No comment	SDS	Covered by Hazard log close out process	Being addressed via hazard log process.
2A	08-2.2	Haymarket city bound platform - The city bound platform is going to be a very busy platform as it is shared between both buses and tram, therefore careful consideration needs to be given to the shelter(s) location and configuration with people getting on and off buses/trams and passenger flows around platform. What passenger occupancy levels and movements have been taken into consideration?	A retrospective designers risk assessment to be produced	BSC (SDS)	Open	SDS design in line with requirements and discussions with CEC tie	A retrospective designers risk assessment to be produced as agreed by BSC at ODR workshop 2/03/09	SDS said that this is an area of tight physical constraints and that no other layout is possible without something else changing - which so far has proved to be unacceptable. Hence, SDS will issue their completed design following which tie will arrange a discussion meeting to review the design and determine the final outcome.	Aside from the issue of PIDs, details of the platform have not been raised following comments raised at TA. Revised design needs to address these CEC comments which have been raised with SDS several times already.	tie	SDS to submit design and Tie to comment on design submitted.	
2A	08-2.4	Haymarket Yards Turnback siding lighting - what is the lighting provision proposed at Haymarket Yards Turnback? The planning drawing ULE90130-02-PLG-00022 v2 shows light combined with OLE poles on the siding road. The lighting layout plans ULE90130-02-LTG-00002 v3 however don't show this provision	Overspill lighting from road assumed to be sufficient however if a tram is in the siding one side would be in shadow. Current design to be considered in relation to the type of operations and maintenance activities that might be carried out	TSL	Open		(1) Requirement for lighting needs to be considered holistically with requirements for signalling design in this area. If remote resetting for signalling interlocking is accepted then adequate lighting and a cctv camera will be required. (2) Also if siding is to be used to park a failed tram lighting should be provided so that a technician can safely work on both sides of the tram with adequate lighting	SDS to explain why the quoted lighting levels in the P10r and Technical approval packs are different. Following this explanation tie will determine the next steps - including whether a quote will be required to change what has been designed	Maintenance requirements of such lighting to be considered. If these are not to be maintained by CEC they should be fed from a private supply	SDS	SDS to explain differing lighting levels. Then tie action to determine the next step	Drawing to be updated and re-issued
2A	08-2.6	Vehicle access to the lower road running parallel to Haymarket Viaduct - will vehicles be allowed access to this section particularly operation/maintenance vehicles (substation and crew relief). Will parking spaces be provided or at least not restricted for operation/maintenance vehicles outside this area.	Provision for operational or maintenance parking to be examined	tie	Open	No - access road is for access. This is to be blocked off as creates conflict with tramway / stop / cabinets	Believe that the issue is misunderstood, we are looking for access and parking provision via the carpark, no conflict with tramway, tramstop or cabinets	tie will clarify	No comment	tie	No comment	

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	27th June 2009 meeting notes (file)	Action	BSC Comments 16-07-09	SDS Response	
2A	08-C-1	Maintenance access - we note the gate in the site plan at Haymarket Yard Turnback which will be a useful for maintainers accessing the sidings with tools and equipment. Suggest that provision is made in the TRQ's to allow operational & maintenance vehicles to park in this area.	The gate is shown on the planning drawing (ULE90130-05-PR-D-00022. Instruction required to BSC to provide a site vehicle bay for parking of maintenance/operational vehicles	tie	Open	BSC to be included in line with other less changes in TRQs.	Action will do	in full clarity	Assumption to be included when TRQs are scheduled. Layout proposed has not been approved by CEC.	tie	No comment	
5A	10-1.1	Network Rail along head east of Dalgreen - Following on advice from joint risk review workshop on the 7th May 2008, Transdev were asked to carry out a risk assessment of the turning head based on information discussed in the workshops. The risk assessment was endorsed by PSCC on the 5th August 2008. One of the assumptions made in the risk assessment was that lighting would be provided. Drawing (ULE90130-05-PR-0504 v2 draft signs and road markings) shows provision of a telephone and security gate as briefed in the workshop however drawing ULE90130-05-LTG-0304 v3 (lighting layout plan) doesn't show any lighting provision (note that both drawings are dated 27/06/08). Please confirm that it is the intention to provide lighting at this turning head as specified in	ULE90130-05-LTG-0304 v3 doesn't show any lighting provision. Confirm that lighting isn't provided at this location. Consideration required that MR has approved this layout as well.	BSC (SDS)	open	The draft risk assessment was issued internally to SDS (KS) on 10th May 2008. There was not an action on SDS at the time to incorporate any of these requirements, nor was lighting mentioned in the risk assessment. BSC/SDS to be included in line with ODR review meeting.	Item 1 of Dalgreen Access Point Assessment states as one of its assumptions 'lighting is to be provided at the turning point' therefore provision of lighting wasn't a recommendation. Since the assessment we have discovered that lighting is not shown on the drawing.	As previously agreed by all parties (including HMR) as being required, this is an essential risk mitigation requirement. Hence, SDS must include lighting in their design.	CEC received confirmation when the draft of this document was presented by all parties.	SDS	SDS to include lighting in design. This is an essential Risk Mitigation requirement and must be included.	SDS awaits formal instruction to incorporate risk assessment assumptions into permanent works
5A	10-1.2	Murrayfield Tramstop - As the operator will be required to implement congestion management on match/event days, a pedestrian flow study is expected to verify that the final design does not impose any additional risk to passengers and can be managed effectively by the operator.	To be reviewed once final design of Murrayfield tramstop available	TSL	open			we will review the offered design.	CEC have not reviewed the design for technical approval. CEC opinion that this will not be issued for CEC technical approval. CEC concerns are not clear as to ensure that lighting & drainage are acceptable but that safety considerations have not been raised appropriately.	tie	Design has already been through the CEC planning process. This design does not need to be submitted for technical approval / comment. tie to advise if further review is necessary.	
5A	10-1.3	Murrayfield Tramstop - Future drawings should show location of ticket machines, DCTV cameras, help points proposals for turnstiles and expected passenger flows.	To be reviewed once final design of Murrayfield tramstop available	TSL	open	Requirement to be included prior to anything additional being shown.	Self auditing design drawings to review	we will review the offered design	CEC have not reviewed the design for technical approval. CEC opinion that this will not be issued for CEC technical approval. CEC concerns are not only to ensure the lighting & drainage are acceptable, but that safety considerations have not been raised appropriately.	tie	Design has already been through the CEC planning process. This design does not need to be submitted for technical approval / comment. tie to advise if further review is necessary.	
5A	10-2.3	Murrayfield Tramstop - We are aware of a ScotRail request for an access gate at Murrayfield tramstop, please confirm whether this is being provided? If the gate is to be provided then consideration will need to be given to security arrangements and implications for crowd management on event days.	To be reviewed once final design of Murrayfield tramstop available.	TSL	open	The existing steps at the back of the Stop are to be retained for access to the ScotRail Depot. However SDS have not been instructed to provide a gate from these on to the Stop. This will also the retaining wall and stop design and will need to be instructed.		we will review the offered design	CEC believe no access is required at the Murrayfield stop, in the case CEC need to be told.		CEC technical approval is not required. Design has already been through the planning process	

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	23rd June 2009 meeting notes (US)		Action	BSC Comments 16-07-09	SDS Response
5A	10-2.5	Safe walking routes - Please supply the strategy adopted for providing safe walking routes along the segregated section including, minimum walkway widths, surfacing, clearance from DKE, restricted access areas, warning signage and pedestrian deterrence measures.	Details of minimum walkway widths and minimum clearances from DKE to be provided	BSC (SDS)	open	Standard maintenance walkway width of 700mm with a clearance of 430mm from DKE, with local reductions at isolated obstacles. Presence of pedestrian deterrent paving indicated on transstop IFC drawings. Surface finish shown on planning drawings.	Noted. Which set of drawings shows where the areas of restricted access or limited clearance are? A spreadsheet or table with chainages would be acceptable. Please also supply details of the warning signage.	BSC to clarify	VEC have an informative on warning signs and signs prohibiting pedestrian access on the trackway. Details to be provided.	SDS	SDS to provide details of the signage. SDS to provide Chainages spreadsheet detailing the areas of restricted access or limited clearances.	Details to be forwarded
5A	10-2.8	Restricted Access/limited clearance - What is proposed prior to the areas of restricted access/limited clearance regards warning signage and pedestrian deterrence.	Review signage specification	BSC (SDS)	open		cannot find signage specification please supply reference	BSC to clarify	VEC have an informative on warning signs and signs prohibiting pedestrian access on the trackway. Details to be provided.	SDS	SDS to provide details of the signage. SDS to provide Chainages spreadsheet detailing the areas of restricted access or limited clearances.	Details to be forwarded
5A	10-2.9	In a sighting review with Transdev on the 13/08/2007 (ULE90130-02-MIN-00013 item 3.2) it was noted that the sightlines at chainage 510200 (Haymarket Depot) needed to be considered in more detail once the access road and retaining wall design had been developed. Please confirm this has been considered in the developed design and whether there are any sightline conflicts in this area.	Geometric sighting review to be issued. Further sighting review to be carried out during testing and commissioning.	BSC (SDS)	open	Item closed - operational phase issue	(1) Geometric sighting issues as part of design to be issued as agreed in ODR workshop 26/03/09. (2) Further sighting review to be carried out during testing and commissioning.	BSC to clarify item (1)	No comment	SDS	SDS to provide geometric sighting review to BSC	Sighting review scrolls being issued to BSC under formal cover.
5A	10-2.10	There are locations where the design speed drops below the maximum nominal speed due to the track geometry (excluding locations through tight curves or transstops). For example: from chainage 510000 to 51059 the speed varies between 20kph and 60kph. What would be the effect of increasing the speed in this section in order to maintain a more consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3 and hence related to passenger comfort rather than to safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria so long as safety is not	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions, geometric, sighting and third party requirements. Completion required prior to shadow running.	BSC	Open			SDS has to hand through their Hazard Log closure process	No comment	SDS	Covered by Hazard log close out process	Being addressed via hazard log process.

THE00505319_0009

Sec	Ref	Issue identified at CDR	Update and Action	Who	Status	BSC/SOS further response post meeting	Transdev Response	23rd June 2008 meeting notes (to be completed)	Action	BSC Comments 16-07-08	SOS Response
SC	09-1.1	A8 Underpass pedestrian openings - The current drawings do not show any pedestrian detainer prior to the A8 underpass. The concern that the A8 underpass will be designated an area of restricted access (also see Item 2.1) however should we consider? We suggest that any pedestrian detainer should be positioned near the Gyle tramstop prior to the cutting to deter the public from entering the underpass from the Gyle tramstop side. In case a train needs to be evacuated within the underpass we propose to use the access walkway between the Gyle Centre tramstop. Therefore any pedestrian detainer must still allow access in emergencies if required.	Provide details of pedestrian detainer prior to A8 underpass	BSC (SOS)	Open	Limited clearance signage will be placed to both sides of the structure points. No desire for through signage, therefore not deemed necessary or usual (visibility concern) going to other end of the structure.	Noted, however we thought this was already in place to the public not limited clearance. When IFC drawing show location of the signage on the structure points.	Correct "Pedestrians barred" sign required at each end. SOS to correct their design. Noted that deliberations on the proposed new Gogar interchange station might change the design anyway - but that this is a separate issue and is outwith the ambit of this meeting.	SOS	SOS to correct design. Add Pedestrians Barred signs & reissue drawings.	700mm easement provided to each side with 430mm clearance from the design DKE in accordance with RSPG guidance. Pedestrian detainer paving provided at north end of Gyle tramstop. Therefore no signage at structure.
SC	09-1.4	Gogar Castle crossing - It is suggested that signage is provided at this crossing, the sighting is poor in this location due to the alignment and the surrounding landscaping (hedges, trees, vegetation). If the crossing is lit it will draw attention to the presence of the tramway to approaching vehicles drivers and also tram drivers (to the approaching unsignalled crossing). Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008. At a sighting review meeting attended by Transdev on the 13/08/07 (ULE90130-02-MIN-00001 ref 3.8) there was an action to check that the lighting proposal was adequate.	ULE90130-05-HRL-00006 v6 shows yellow box over junction. ULE90130-05-HRL-00566 v4 and ULE90130-05-L1-00025 v4 show illuminated 'train' and 'tram' signs. Believed that requirement for lighting at this crossing was discussed at the RDWG as cars coming off the A8 from a well lit road into a dark spot could reduce driver perception. Confirm lighting arrangements.	BSC (SOS)	Open	No specific lighting provided to vehicle crossing point - not noted as an issue in RSK.	Transdev advise that the crossing is lit as per assessment.	SOS has in hand through their hazard log closure process.	SOS	Covered by hazard log close out process.	Being addressed via hazard log process.
SC	09-1.5	Edinburgh Park Pedestrian Crossings - We would like to see the design risk assessment that was carried out for the two pedestrian crossings showing the rationale for provision of lighting, signage and general pedestrian protection strategies along the route. Transdev carried out an operational assessment of the Edinburgh Park Crossings on the 30th July 2008. The recommendations from the assessment included the following points for consideration: Provision of appropriate lighting following a lighting assessment at the official crossings in Edinburgh Park to assist tram drivers and to provide an indication that the crossing is an official crossing (hopefully encouraging use). At a sighting review meeting attended by Transdev on the 13/08/07 (ULE90130-02-MIN-00001 ref 3.5) there was an action to check that the lighting design considers and avoids 'dark spots' in this vicinity. Provision of standard tramway signage at appropriate points if this is not currently the intention. Extension of low lying vegetation, such as ivy, along the entire line of the tramway at this location to provide a	ULE90130-05-HRL-00561 v4 shows standard tramway signage and tactile paving prior to the pedestrian crossing points. Confirm lighting provision and coverage for the 2 pedestrian crossings at the northeast of Edinburgh Park Central extension.	BSC (SOS)	Open	See DCR0102 - there is an outstanding change estimate associated with incorporating Transdev comments in Edinburgh Park. The design in the areas, including pedestrian flow, lighting and landscaping has been managed by BA and SOS in conjunction with NEL, with attendance and buy-in from OGC Transport and Planning.	Transdev advise that recommendations as per assessment are incorporated into the design.	BSC to progress the change.	ULE90130-02-MIN-00001 ref 3.5) there was an action to check that the lighting design considers and avoids 'dark spots' in this vicinity. Confirmation provided that matters have been addressed.	Be to advise/instruct BSC on change estimate submitted.	

TIE00505319_0010

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	Card June 2025 meeting notes (this)		Action	BSC Comments 16-07-09	SDS Response
5C	09-1.6	Cycle tramstop - The footpath that runs parallel along the back of the tramstop is at a higher level than the tramstop. The top of the pedestrian parapet on the retaining wall is at the same level as the top of the tramstop canopy therefore there is a potential risk of someone climbing onto the top of the canopy. Further detention in this location to prevent this occurrence is required.	design issue - to be reviewed	BSC (SDS)	Open	Localised increase in parapet height to the rear of the platform shelter was considered during the design phase. This was rejected by CEC Planning. Amendment to the consented proposal may require re-application for pre-technical approval. This would require instruction.	Transdev advise that the risk of someone accessing the top of the tramstop shelter canopy is designed out	Noted that four different designs have been seen. CEC Roads want 1.4m high wall. Agreed that the mesh fence is additionally provided for in the SDS design behind this wall should be an adequate overall mitigation against climbing. Hence, go with 1.4m high wall and the mesh fence	CEC Roads	SDS	SDS to confirm 1.4m high wall and mesh fence at tramstop has been included in the design	Current Structures/Forms top IFC drawings detail 1.4m railing. Appendix 4/1 to be re-issued detailing 1.4m high railing with mesh infill panels
5C	09-2.4	Along Edinburgh Park the planning drawings show that the tramway will be delineated by granite setts however the designers' response to the stage 2 road safety audit (B7.1.6) makes reference to a low height kick rail. Please confirm the delineation of the tramway in this location.	Delineation along Edinburgh Park to be confirmed	BSC (SDS)	open	Tramway delineation is granite setts. Kick rail provision is used in limited locations on the far side of the footway and therefore is not tramway delineation	(1) Granite setts for delineation - okay (2) not sure where kick rail will be used, please explain further or reference drawing	BSC to clarify	Reference to Kickrail details from designers provided. Will be reviewed when drawing out DS plans	SDS	SDS to clarify the areas in which the 'Kickrail' will be provided.	Detailed on Roads series drawings
5C	09-2.5	Gogarburn Tramstop - Maintenance and cleaning requirements need to be considered in the design to minimise the requirement for permits to work or isolation, suggest referring to Transdev's Work On or Near the Tramway procedure.	To be reviewed once final design of Gogarburn tramstop available	TSL	open			Action with TEL	Details of this tramstop have not yet been submitted	TEL	No comment	
5C	09-2.6	Gogarburn Tramstop - We believe that RBS have an expectation to use the tramstop CCTV cameras for security purposes, confirm that a feed will be provided to RBS but control of tramstop cameras will only be from Gogar depot control room.	To be reviewed once final design of Gogarburn tramstop available	TSL	open			Action with TEL	Details of this tramstop have not yet been submitted	TEL	No comment	
5C	09-2.7	Gogarburn Tramstop - There may be potential for the public to use Gogar Church access road as a drop off point for this tramstop increasing usage of the crossing (observation).	To be reviewed once final design of Gogarburn tramstop available	TSL	open			Action with TEL	Details of this tramstop have not yet been submitted	TEL	No comment	
5C	09-2.8	Gogarburn Tramstop - The visibility between trams travelling eastbound and the access road may be restricted by the proposed wall design on the outbound platform. Please confirm that a sighting study will be conducted to determine if any restrictions on visibility are imposed by the proposed tramstop structure.	To be reviewed once final design of Gogarburn tramstop available	TSL	open			Action with TEL	Details of this tramstop have not yet been submitted	TEL	No comment	
7A	12-1.1	Gogar Farm Road crossing - Ensure that the landscaping which mainly consist of trees within the vicinity of the junction is outside of the visibility splays and sufficiently far enough to prevent future growth encroaching.	To be reviewed once final design of Gogar Farm Road crossing available	TSL	Open			Action with TEL	Design not yet provided pending meeting on Gogarburn Tramstop	TEL	No comment	
7A	12-1.4	The location of point position indicators at the airport crossover are not shown on the planning drawings ULE90130-07-PLG-0007 v2.	Confirm drawings series where the locations of point position indicator are shown	BSC (SDS)	open	Not a planning issue.	May not be a planning issue but currently there isn't a set of drawings which show the location of point position indicators. Semere Sicas S7 show the location of point indicators at Haymarket, Newmarket, Ocean Terminal, Depot exit/entry and Airport. Drawings required for Shankwick place, Leith Walk, Edinburgh Park and York Place.	BSC to clarify	CEC have placed an informative on details of PPI and Tram signage	SDS	SDS to confirm what Drawings the point position indicators are shown.	Drawing ULE90130-SW-SCC-00372 with key items details on ULE90130-SW-SCC-00030 Further developed drawing by Siemens is ETN-027-SIC-019

TIE00505319_0011

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	2 and June 2019 meeting notes (ref)		Action	BSC Comments 15-07-09	SDS Response
7A	12-1.5	Airport tramstop - Future drawings should show how and where the CCTV camera(s) and lighting will be integrated into the tramstop canopy.	To be reviewed once final design of Airport Tramstop available	TSL	Open			Action with TEL	Design not yet reviewed	TEL	No comment	
7A	12-1.6	Airport tramstop - Future drawings should show the integration of the DLE arrangement at the north end of the platform in relation to the escalator and lift building	To be reviewed once final design of Airport Tramstop available	TSL	Open			Action with TEL	Design not yet reviewed	TEL	No comment	
7A	12-1.7	Airport Tramstop - Future drawings should show the arrangements for vehicle overrun protection (e.g. sand trap, large platform cut)	To be reviewed once final design of Airport Tramstop available	TSL	Open			BSC/SDS in debate	Proposed design to be submitted to C&G through an intermediate and Planning in order to allow more change to the approved architectural design	SDS	SDS to confirm design and submit date of Airport Tramstop team overrun protection arrangements	Report detailing terminus facility issued to BSC
7A	12-1.8	Airport Tramstop - Pedestrian deterrent at the south end of the platform will be required however the design should still allow emergency evacuation from this point if required.	To be reviewed once final design of Airport Tramstop available	TSL	Open			Action with TEL	Design not yet reviewed	TEL	No comment	
7A	12-2.1	The footpath connection between Gogarthum tramstop to RBS road-bridge - there may be a risk of pedestrians attempting to cross the A8 rather than using the over bridge. C&G may want to consider whether additional pedestrian deterrent is required at this location.	To be considered	tie	Open			Action with tie	Design not yet reviewed awaiting design of Gogarthum Tramstop	tie	No comment	
7A	12-2.2	Design Speed - There are locations where the design speed drops below the maximum nominal speed due to the track geometry. For example: from chainage 710010 to 710400 the speed varies between 15kph and 25kph which seems slow even considering the alignment. What would be the effect of increasing the speed in this and other sections in order to maintain a more consistent operational speed and potentially reduce run-times? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE 90130-SW-SFH-00001 V3 and hence related to passenger comfort rather than to safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions: geometric, sighting and third party requirements. Completion required prior to shadow running.	BSC	open			SDS has in hand through their hazard log closure process	No comment	SDS	Covered by Hazard log close out process	Being addressed via hazard log process.
7A	12-2.3	Airport Tramstop - There are no bins shown on the platform but there are bins shown in the kiosk area - could a couple of additional bins be located near the platform?	To be reviewed once final design of Airport Tramstop available	TSL	Open			Action with TEL	Design not yet reviewed	TEL	No comment	
8	07-1.9	Drawing ULE 90130-06-DEP-00250 should show provision for power and water services at the bogie wash point as specified by ER section 25.8.	Discussed at section 6 DAS, SDS confirmed that there is power and water provision inside of depot building for bogie wash point. To be confirmed	BSC (SDS)	Open			BSC to clarify	No comment	SDS	SDS to confirm that there is power and water points provided in the design for the bogie wash point	The Electrical and Water supplies to jet wash to be taken from inside the depot. This will be shown for the next issue accordingly- by discipline

Sec	Ref	Issue identified at CDR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	30rd June 2009 meeting notes (file)	Action	BSC Comments	SDS Response
6	07-1.11	There is an opportunity to improve the general CCTV coverage around depot external site by relocating the CCTV camera at the west end exit/entrance from gate. The camera at the south east corner of the building should provide adequate coverage of the tram gate. This camera could be relocated to the east or west of the stabling area to look down the sides of the tram and also cover the north perimeter fence when trams are in the stabling area. It would be preferential to have CCTV cameras looking both west and east of the stabling area (see also 2.15)	Discussed at depot workshop 25/02/09. Coverage study to be produced for review	BSC	Open	Any specific requirements to be clearly documented and instructed.	Responded to RFI 233	Response sent to BSC over 1 week prior to the date of this meeting	No comment	BSC	Siemens (Michael Wilken) to confirm who RFI 233 was submitted to, and if and when BSC have responded to it.
6	07-1.12	Fire alarm & security layout drawings ULE90130-06-DEP-00248, 00249 & 00250 show 10 internal CCTV cameras around and in the control room/cash room, staff entrance hall, visitor and management entrance hall, outside the stores and reception area. Please discuss the rationale for providing these cameras in relation to the depot security strategy. We suggest that cameras around the control room may not be required as this is intrusive and doesn't help promote a healthy working environment. The camera outside the stores may have some benefit as a deterrent to thieves. The camera in the reception may only be required if the depot access and security system doesn't include an intercom/video link at the visitors door. We suggest that the cameras in the entrance halls may also not be required, as this is intrusive and doesn't help promote a healthy working environment.	Discussed at depot workshop 25/02/09. Requirement for internal camera to be reviewed	BSC	Open	Any specific requirements to be clearly documented and instructed	Responded to RFI 233	Response sent to BSC over 1 week prior to the date of this meeting	No comment	BSC	Siemens (Michael Wilken) to confirm who RFI 233 was submitted to, and if and when BSC have responded to it.
5	07-2.4	Drawings show that walkways are only provided on one side of tram - in theory this is okay for cleaner access to the tram for internal cleaning however if the tram wash isn't functional due to a fault or cold weather, access to both sides of the tram will be required to hand wash the trams. Also during tram prep access to both sides of the tram may be required. We suggest providing a smaller 1m walkway down the other side of the tram for this purpose as specified in ER's section 2.8. We are looking for a simple walkway that would be reasonable for walking on, and ramped up to meet the crane platform	Discussed at section 6 DAS, SDS confirmed the walkway would be ballast. Requirement for additional 1m walking surface (e.g. gravel) as suggested to be reviewed	file	open			Action with file	No comment	file	No comment
6	07-2.16(1)	Video link to reception and control room at the visitor entrance door rather than staff entrance door.	Discuss at Depot Workshop	BSC (SDS)	Open	Clear requirement to be stated if required	Drawing ULE90130-06-DEP-00248 v4 shows the video link at the staff entrance this should be relocated to the visitor entrance	Response sent to BSC over 1 week prior to the date of this meeting	No comment	BSC	Siemens (Michael Wilken) to confirm if and when BSC have responded.

Sec	Ref	Issue identified at ODR	Update and Action	Who	Status	BSC/SDS further response post meeting	Transdev Response	27th June 2009 meeting notes (ref)		Action	BSC Comments 16-07-09	SDS Response
6	07-2 13	Is there a risk with the fork lift truck driving over the tram wash sump covers in order to access the staff bins?	Following details of Tramwash design to be reviewed	BSC (SDS)	Open			BSC to clarify		SDS	SDS to clarify whether they have included tram wash and sump covers in the depot drawings.	The current PIS Ltd design layout for the Tram Wash- as proposed in our drawings, will be superseded by the new approved design by WESURAIL, with the tanks and plantroom located at the western end of the building, with no implication on a fork lift route.