ODR Workshop – Sections 5A, 5B, 5C, 6 and 7A

26th March 2009

Attendees

Sinead Scott (TSL)
Lindsay Murphy (**tie**)
Roger Jones (TSL)
Alan Dolan (SDS)
Neil Wood (TSL)
Michaela Keating (TSL)
John Riley (BSC)
Gavin Clement (SDS)
Liz Parkes (TSL)
Gail Blythe (**tie**)
Simon Nesbitt (BSC)
Kirsty Wilson (**tie**)
Gavin Murray (**tie**)
Andy Steel (**tie**)
Jonathon Bird (BSC)

Ref	Minutes	Action By
1	SS opened the meeting by explaining that the purpose of the workshop was to go through the issues raised in the Operational Design Reviews (ODR) for sections 5A, 5B, 5C, 6 and 7A and agree between all parties whether each issue is valid in terms of safety, performance or compliance with ER's and therefore needs to be considered in the design. Issues which are related to BSC's design submissions will be dealt through the design review process. Issues already raised in the Depot Workshop will be dealt with through that forum.	n/a
2	All issues raised in ODR meetings 06, 07, 09, 10 & 12 were discussed, action required to close-out and responsibility. See ODR tracker below for actions on individual issues. (Note: Issues which have been discussed or raised in another forum e.g. design review, depot workshop or hazard log are marked as 'transfer' in the ODR issues tracker.)	n/a
3	Actionees are required to submit target dates for expected completion/closeout of individual issues to SS	All 14/04/09

ODR Issue Tracker

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5A	10-1.1	23/10/2008	Network Rail turning head east of Balgreen – Following an access point 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 workshop. 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-HRL-0504 v2 (traffic signs and road markings) shows provision of a telephone and security gate as briefed in the workshop however drawing ULE90130-05-LTG-0004 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 approved assessment.	ULE90130-05-LTG-0004 v4 doesn't show any lighting provision. Confirm that lighting isn't provided at this location. Confirmation required that NR has approved this layout as unlit.	BSC (SDS)	open		
5A	10-1.2	23/10/2008	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		
5A	10-1.3	23/10/2008	Murrayfield Tramstop - Future drawings should show locations of ticket machines, CCTV cameras, help points proposals for turnstiles and expected passenger flows.	To be reviewed once final design of Murrayfield tramstop available	TSL	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5A	10-2.1	23/10/2008	Haymarket Depot access road automated sliding security gate – Drawing ULE90130-05-HRL-00001 v5 shows an automated sliding security gate at the access to Haymarket Depot. Please confirm how the control and status (open/closed) of the security gate will be integrated into the traffic control of junction 200? Confirm that a vehicle accessing the depot will not get a green phase from the traffic controller unless the gate is open? Confirm that a tram will be able to get a proceed signal if the gate is open to ensure that if the gate is faulty and cannot be closed that the tram signal is not at stop even if the vehicle phase is on red.	Confirmed that the security gate controlled by First Scot Rail (Haymarket Depot) is not interlocked with the junction control		closed		
5A	10-2.2	23/10/2008	Tram path delineation – the planning drawings (issued for prior approval) show tram path delineation for maintenance access. The tram path is derived from the DKE plus a minimum appropriate clearance; please confirm what clearance has been applied to the DKE along the segregated running sections to define the tram path? Also please confirm what minimum clearance has been adopted in the design between a safe walkway and the tram DKE?	Clarify the minimum clearance adopted between the DKE and a safe walkway. Clarify the minimum clearance added to the DKE to derive the tram path.	BSC (SDS)	open		
5A	10-2.3	23/10/2008	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		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5A	10-2.4	23/10/2008	Russell Road Retaining Wall W3 – We note that the lineside walkway is shown on the planning drawing ULE90130-05-PLG-00213 v2 as restricted at Russell Road retaining wall W3; however on the structures planning drawing ULE90130-05-PLG-00219 v4 the cross-section view shows a clearance of 1180mm between the DKE and the parapet. Other drawings have shown safe walkways of 700mm with a minimum distance of 430mm between the DKE. Please confirm where along the W3 retaining wall the lineside walkway is restricted?	Confirm where along the retaining wall W3 the access is restricted	BSC (SDS)	open		
5A	10-2.5	23/10/2008	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		
5A	10-2.6	23/10/2008	Balgreen Road Bridge – We note that planning drawings ULE90130-05-PLG-00283 v2 and ULE90130-05-PLG-00281 v2 does not show a safe walkway therefore please confirm whether this structure is limited clearance.	Confirm if Balgreen Road Bridge is restricted access	BSC (SDS)	open		
5A	10-2.7	23/10/2008	Safe Walkway - On Roseburn Street Viaduct and Water of Leith Bridge the safe walkway is surfaced with green tarmac – Please confirm that this approach to surfacing has been used consistently on all safe walkways on structures along the segregated section throughout the system.	ULE90130-05-BRG-00085 v3 details green coloured surfacing to denote walkway. ULE90130-05-BRG-00751 v4 details green coloured surfacing to denote walkway. Confirm if green coloured surfacing to denote safe walkways on structures is to be adopted system wide	BSC (SDS)	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5A	10-2.8	23/10/2008	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	TSL/tie	open		
5A	10-2.9	23/10/2008	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 formally issued. Further sighting review to be carried out during testing and commissioning.	BSC (SDS)	open		
5A	10-2.10	23/10/2008	There are locations where the design speed drops below the maximum nominal speed due to the track geometry (excluding locations through tight curves or tramstops). For example; from chainage 510000 to 51069 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 compromised.	Geometric design speed limits are shown on the vertical alignment drawings. Basis of calculation of geometric limits is in an SDS document. There is no document which sets out the limiting parameter that sets the geometric limit shown on the vertical alignment drawing. This would be highly desirable for the Evidence File (or Health & Safety File" that forms part of the EF). A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include; geometric limits,	BSC	Open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
				sighting limits, limits due to platforms & points and third party requirements. Completion required prior to shadow running. Essential for evidence file.				

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5B	06-2.1	11/09/2008	Pedestrian/cyclist uncontrolled crossings - Cyclist fatality or serious injury is a real issue on tramways at uncontrolled crossings. What consideration has been given in the design process to encourage cyclists to control their speed, dismount or proceed with caution at an uncontrolled crossing? Some cyclists may tend to approach and cross the tramway at a speed which prevents then from sufficiently observing if a tram is approaching. Also there is the possibility that if the cyclist is a regular user of the crossing and typically doesn't have to stop due to the presence of a tram then complacency may also be an issue. A consistent approach at all uncontrolled crossing should be adopted which considers: • The direction the cyclist will be facing when crossing the tramway, should be facing the tram on the nearside if the crossing is not at 90°. The crossing angle can be manipulated by the use of chicanes. • Signage (tram look both ways signs, cyclist dismount) on approach to crossings. • Markings (SLOW) on approach to crossings. • Other measures which will encourage cyclist to modify their behaviour on approach to crossings, such as chicanes, surface colour contrast, bollards etc.	Closed via hazard log entry, specific uncontrolled crossings to be used to assess risk and mitigation measures	BSC	Transfer		
5B	06-2.2	11/09/2008	Balgreen access gates – Confirm there will be adequate clearance between the gate and the DKE when the gates are left open. Additional information on the design of the gates, locking and securing arrangements would be useful in order to formulate operational procedures with NR.	Confirm that gates are to NR specification, and clearance from DKE has been considered in design	BSC (SDS)	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5B	06-2.3	11/09/2008	Confirm whether the crossover at Balgreen will be retained even if the additional sidings is removed, this would be preferred by the operator as it will provide greater operational flexibility.	Not retained	[redacted]	closed	[redacted]	[redacted]
5B	06-5.2	11/09/2008	Operational speeds over Carrick Knowe under bridge to be assessed during testing and commissioning.	To note	[redacted]	Closed	[redacted]	[redacted]
5B	06-6.1	11/09/2008	Determine the access points for a road rail vehicle along the segregated route. Having a number of access points along the segregated route provides a number of benefits; reduces the amount of travelling time to and from the work site (short possession times) and maximises maintenance flexibility. At road signalled junctions, road rail vehicles are required to obey road signals unless piloted by a tram driver. Otherwise the road rail vehicle can only proceed by applying NRSWA code of practice	To Note	[redacted]	closed	[redacted]	[redacted]
5C	09-1.1	17/10/2008	A8 Underpass pedestrian deterrent – The current drawings do not show any pedestrian deterrent prior to the A8 underpass. We assume that the A8 underpass will be designated an area of restricted access (also see item 2.1) however please confirm? We suggest that any pedestrian deterrent provided 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 tram needs to be evacuated within the underpass we propose to use the access walkway towards the Gyle Centre tramstop. Therefore any pedestrian deterrent must still allow access in emergencies if required.	Provide details of pedestrian deterrent prior to A8 underpass	BSC (SDS)	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5C	09-1.2	17/10/2008	A8 underpass drainage - Drainage drawing ULE90130-05-00024 v5 is not consistent with A8 underpass drainage drawing ULE90130-05-BRG-00552 v2. Please provide further detail of the drainage provided along and leading up to the A8 underpass, in particular showing rodding points for the carrier drain and access points for cleaning of the drainage channels.	ULE90130-05-DNE-00024 v7 and ULE90130-05-BRG-00552 v2 appear inconsistent. Confirm drainage is consistent	BSC (SDS)	open		
5C	09-1.3	17/10/2008	Gogar Castle access crossing – we suggest that the proposed trees shown on the landscape drawing (ULE90130-05-LDS-00026 v9) on the south east side of the access road are either removed or moved south sufficiently to avoid the visibility of cars on the stop line being obscured to a tram driver travelling westbound. Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008. This issue has also been raised on the Stage 2 Road Safety Audit ref B5.1.2.	Confirm close out of issue by Road Safety Audit	BSC (SDS)	Transfer		
5C	09-1.4	17/10/2008	Gogar Castle crossing - It is suggested that lighting is provided at this crossing, the sighting is poor in this location due to the alignment and surroundings landscaping (cottage, fence, vegetation). If the crossing is lit it will draw attention to the presence of the tramway to approaching vehicle 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-00026 v6 shows yellow box over junction, ULE90130-05-HRL-00566 v4 and ULE90130-05-LT-00026 v4 show illuminated 'stop' and 'tram' signs. Believe 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 (SDS)	Open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5C	09-1.5	17/10/2008	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 recommendation 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 physical reminder to pedestrians and encourage use of the official crossings. Provision of signage to remind owners to keep their dogs on leads: this will also be to the benefit of wildlife in the park.	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 tramstop.	BSC (SDS)	Open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5C	09-1.6	17/10/2008	Gyle 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 deterrent in this location to prevent this occurrence is required.	design issue - to be reviewed	BSC (SDS)	Open		
5C	09-1.7	17/10/2008	Gyle tramstop - The two CCTV cameras proposed for the tramstop are located one on each platform but both are on the east end. This means that the view of the help point on the Airport bound platform is restricted as the help point is located to the west of the shelter. Moving one of the camera to the west end of the platform will still provide adequate coverage of the main passenger flows from the west but also provide improved all round coverage of the tramstop and footpaths.	Confirm location of CCTV cameras at the Gyle tramstop	BSC (SDS)	Open		
5C	09-2.1	17/10/2008	We would like to know what areas of the tramway along section 5C are restricted access for the public and therefore the design rationale for these areas regarding provision of pedestrian deterrent.	Areas of restricted access to be identified	BSC (SDS)	Open		
5C	09-2.2	17/10/2008	Confirm the track form along this section (BSC proposal rather than SDS design).	BSC have submitted location of designated track forms revision B		closed		
5C	09-2.3	17/10/2008	A8 underpass lighting – In a meeting on 14th April 2008 with the ICP, SDS stated that they had undertaken a qualitative assessment concluding that lighting of the A8 underpass wasn't required. Transdev would like a copy of this assessment in order to inform operational reviews of driving conditions and evacuation procedures approaching and along the underpass.	Lighting requirement will be reassessed with Gogar Interchange		closed		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5C	09-2.4	17/10/2008	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 demarcation of the tramway in this location.	Delineation along Edinburgh Park to be confirmed	BSC (SDS)	open		
5C	09-2.5	17/10/2008	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		
5C	09-2.6	17/10/2008	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		
5C	09-2.7	17/10/2008	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		
5C	09-2.8	17/10/2008	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		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
5C	09-2.9	17/10/2008	Gyle Tramstop - The Airport bound tramstop there appears to be a gap between the back of the shelter and the retaining wall. This will restrict access for shelter cleaning, would it be possible to provide a canopy in this location without glass panels along the retaining wall side.	ULE90130-05-STP-00067 v2 states that rear glass panel not to be used		closed		
7A	12-1.1	27/11/2008	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		
7A	12-1.2	27/11/2008	Gogar Farm Road Crossing - It is suggested that goal posts are provided at this location given the potential for use of the crossing by high vehicles, in connection with farming and, potentially, construction activities. Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008.	Goal posts only used if wire is substandard height		closed		
7A	12-1.3	27/11/2008	Eastfield Avenue junction – lighting drawing ULE90130-07-LTG-0008 v1 shows that the existing lighting on the road will be removed. If the lighting where to be retained this would improve the visibility of the tramway to the pedestrians/cyclists using the crossing and also help increase driver awareness on the approach. The Road Safety Audit for section 7A recommends retaining the existing lighting to prevent deterring pedestrians from using the dark pedestrian crossing in favour of the road crossing (no footpath).	Post meeting: ULE90130-07-LTG-0008 v4 shows lighting on both road and ped/cyclist crossing		closed		
7A	12-1.4	27/11/2008	The location of point position indicators at the airport crossover are not shown on the planning drawings ULE90130-07-PLG-00074 v2.	Confirm drawings series where the locations of point position indicator are shown	BSC (SDS)	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
7A	12-1.5	27/11/2008	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		
7A	12-1.6	27/11/2008	Airport tramstop - Future drawings should show the integrations of the OLE arrangement at the north end of the platform in relation to the canopies and kiosk building.	To be reviewed once final design of Airport Tramstop available	TSL	Open		
7A	12-1.7	27/11/2008	Airport Tramstop - Future drawings should show the arrangements for vehicle overrun protection (e.g. sand drag, large planters etc).	To be reviewed once final design of Airport Tramstop available	TSL	Open		
7A	12-1.8	27/11/2008	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		
7A	12-2.1	27/11/2008	The footpath connection between Gogarburn tramstop to RBS road-bridge - there may be a risk of pedestrians attempting to cross the A8 rather than using the over bridge. CEC may want to consider whether additional pedestrian deterrent is required at this location.	To be considered	tie	Open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
7A	12-2.2	27/11/2008	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 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 compromised.	Geometric design speed limits are shown on the vertical alignment drawings. Basis of calculation of geometric limits is in an SDS document. There is no document which sets out the limiting parameter that sets the geometric limit shown on the vertical alignment drawing. This would be highly desirable for the Evidence File (or Health & Safety File" that forms part of the EF). A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include; geometric limits, sighting limits, limits due to platforms & points and third party requirements. Completion required prior to shadow running. Essential for evidence file.	BSC	open		
7A	12-2.3	27/11/2008	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 along the platform also?	To be reviewed once final design of Airport Tramstop available	TSL	open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
7A	12-2.4	27/11/2008	Airport Tramstop - Location of the electronic cabinet – assuming that the tramstop electronic equipment will be located inside the 'stop equipment room' in the kiosk area – is there sufficient space for a technician to work inside the room or will additional floor space outside the room be required? If additional floor space is required maybe consider moving this to a location away from pedestrian flows.	The 'stop equipment cabinet' was not intended to house comms equipment.		closed		
6	07-1.1	20/01/2009	We consider that there may be an opportunity to reduce the number of section insulators and electrical sections shown on drawing ULE90130-06-OLE-00001. Transdev/tie are happy to discuss the isolation requirements and depot functionality with BSC.	Issue taken forward in Siemens OLE design submission and tie review process		Transfer		
6	07-1.2	20/01/2009	There are 3 OLE poles in the middle of the stabling area shown on drawing ULE90130-06-OLE-00001(v8), these OLE poles are shown located in the stabling area cross walkways. In order to ensure that the pathways are adequate for staff and any equipment we suggest that the width of the walkway is increased or the walkway is relocated, perhaps split to be across each set of stabling berths.	Discussed at section 6 DAS meeting 29/10/08, confirmed by SDS that walkway extends across whole of area between trams.		closed		
6	07-1.3	20/01/2009	Goal posts are required on both sides of the tramway crossing on the depot access road to prevent high vehicles conflicting with the OLE; this is a critical location within the depot for tram movements.	Discussed at section 6 DAS meeting 29/10/08, confirmed by SDS that wire height was 6.5m therefore shouldn't conflict with any high vehicles.		closed		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-1.4	20/01/2009	Adequate walking routes are required to access the point locations for manual operation both from the building and from a tram stopped in advance of the points. All manual depot points should have a non slip platform for standing on when operating the mechanism. Transdev are happy to discuss the requirements with BSC.	Discussed at section 6 DAS meeting 29/10/08, SDS confirmed that all point machines would have flush hardwood surface with anti slip finish. Walking routes would be via ballast.		closed		
6	07-1.5	20/01/2009	We suggest that to ensure appropriate lighting is provided at the tram gates on the east depot entrance and exit, consideration should be given to providing adequate lighting along the route from the tram gate to west of the over bridge. Operational crew will be using this route frequently to operate points and close the depot gates after and prior to service (ER section 29.8).	Discussed at section 6 DAS meeting 29/10/08, SDS confirmed that gates and route would not be lit separately, the CCTV camera at the gate is specified for low lighting conditions and lighting levels at roundabout (50lux) should spill over and provide appropriate lighting levels for operational duties.		closed		
6	07-1.6	20/01/2009	SDS's previous response to ROR (12/12/2007) stated that if a need for a disabled toilet is identified on the ground floor then one can be installed in the infirmary. There is a possibility that the administration staff working on the ground floor may not be able bodied, an accessible toilet should therefore be installed.	Confirmed that infirmary now has a disabled toilet		closed		
6	07-1.7(1)	20/01/2009	Removing the internal walls between the male and female locker rooms and mess room; this would create a larger open plan space which would provide greater flexibility.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change	BSC (SDS)	Transfer		
6	07-1.7(2)	20/01/2009	Further consideration to be given to number of tables & chairs to be provided in mess room area; number currently shown may be excessive.	Discussed at depot workshop 25/02/09, furniture type and number to be confirmed	BSC	Transfer		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-1.7(3)	20/01/2009	Opening up the space near the control room between the visitor area, foyer, and vending areas by removing the internal door and partition walls.	Discussed at section 6 DAS meeting, not feasible as these walls are firewalls therefore fire strategy would need to be revisited.		closed		
6	07-1.7(4)	20/01/2009	Changing the accessible toilet near the control room to a CCTV viewing suite.	Would be difficult due to the current plumbing design, however other options for a CCTV viewing suite are available see 1.8		closed		
6	07-1.7(5)	20/01/2009	Provision of an opening window between the control room and the visitor viewing area.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change	BSC (SDS)	Transfer		
6	07-1.7(6)	20/01/2009	Provision of an opening window between the control room and the day roster planning room.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change	BSC (SDS)	Transfer		
6	07-1.8	20/01/2009	A private office is required to view CCTV images by third parties (police etc) in order to comply with data protection legislation. The ideal location for this would be a small room near the control room. Propose changing the accessible toilet near the control room into a CCTV viewing suite. There is another accessible toilet between the female and male toilets which is in a good overall location for both administration and control room staff.	Current options include utilising cash office or if data can be accessed securely via depot LAN then any office can be utilised. Raised through Comms design review		Transfer		
6	07-1.9	20/01/2009	Drawing ULE90130-06-DEP-00260 should show provision for power and water services at the bogies wash point as specified by ER section 29.8.	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		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-1.10	20/01/2009	It is important that the workshop layout facilitates the movement of a bogie from a tram on the tram lift to the bogie wash point then to the bogie drop off point via the crane. This movement must be possible with a tram on the tram lift. We suggest that the location of the bogie drop off point may need to be moved further east (east of the section insulator) and extended slightly into the workshops to facilitate this movement. We understand that BSC are having internal discussions on this topic.	Discussed at depot workshop 25/02/09, CAF are in discussion with tie regarding a bogie turntable	BSC	Transfer		
6	07-1.11	20/01/2009	There is an opportunity to improve the general CCTV coverage around depot external site by relocating the CCTV camera at the west depot exit/entrance tram gate. The camera at the south east corner of the building should provide adequate coverage of the tram gate. The 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		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-1.12	20/01/2009	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	tie	Open		
6	07-1.13	20/01/2009	1.13. **Drawing ULE90130-06-DEP-00247 v1 (first floor small power layout) shows the location of sockets and data outlets within the first floor rooms. Transdev would like the opportunity to discuss the location of the sockets and outlets prior to the drawing being issued for construction. We suggest that some of the outlets in the open plan office would be better placed on the floor rather than along the walls to provide flexibility when arranging furniture and workspaces.	Discussed at section 6 DAS meeting 29/10/08, not feasible as the floor isn't floating.		closed		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-1.14	20/01/2009	It is important that all meeting rooms and private offices are sound proofed as much as possible to prevent conversations being heard outside of these rooms. On drawing ULE90130-06-DEP-00019 acoustic ceiling tiles are shown in the control room, roster planning room, training rooms and meeting room. Suggest that the private offices on the 1st floor and on the ground floor also include acoustic ceiling tiles.	Discussed at section 6 DAS 29/10/08, SDS confirmed that sound proofing would be provided for meeting rooms and GM office, however may not be possible for glass fronted offices.		closed		
6	07-2.1	20/01/2009	We would like to discuss with BSC their proposal for depot manual points and mechanical indication. Although mechanical indication of detection as specified by the ER's would mean a lesser requirement for visual or manual inspection of the lie of facing points by drivers prior to proceeding over them, there is a stronger preference for a reliable and ergonomic manual point mechanism which is fully trailable (no damage to mechanism and switch rail reset) and can be set up to be sprung or bi-stable.	Discussed at depot workshop 25/02/09, Siemens to follow up	BSC	Transfer		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-2.2	20/01/2009	Utilisation of sanding carts within the current depot site layout – sanding of the trams is in the CAF maintenance scope, has thought been given to the logistics of replenishment of the sand boxes on the trams. We understand that BSC are addressing this internally. Issue to consider are: • Accessibility of sand carts in and around the depot (through internal doors of 1m width and along walkways) if sanding is not restricted to one location. • Ensuring there is enough room for the sand carts to be operated • Accessibility to both sides of the tram • Will the tram have a visual indication of the sand box level, this will influence whether sanding is required every night or just on indication. • Whether sanding is to be carried out on return of the trams to the depot from service or at another time prior to release into service. Logistics involved of moving the sand cart to the trams or moving the trams to the sand cart.	Discussed at depot workshop 25/02/09, to be discussed at ODR workshop. Information from CAF required before issue can be progressed further; indication of sand box level, time taken to fill box from empty, estimate of time taken to replenish tram.	BSC	Transfer		
6	07-2.3	20/01/2009	We would like to confirm the number of lockers which are being provided. The drawing ULE90130-06-DEP-00005(v8) shows '90 2+2 lockers' and '70 2+2 lockers' can you confirm whether this equates to 320 lockers? We understand that interleaved lockers were specified for the 1st floor locker rooms. How many lockers are provided in the ground floor locker rooms this is not shown on the drawing, consideration should be given to the additional locker space required by technicians/cleaners.	Discussed at section 6 DAS 29/10/08, SDS confirmed numbers as 320 on 1st floor and interleaved proposed in procurement spec.		closed		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-2.4	20/01/2009	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 29.8. We are looking for a simple walkway that would be reasonable for walking on, and ramped up to meet the cross-walkways.	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	tie	open		
6	07-2.5	20/01/2009	In the previous depot ROR (12/12/2007) the risk of a vehicle coming down the south embankment from the A8 onto tram line was highlighted. Does the current design include a road safety barrier? A risk assessment should be included as part of the design process showing the validation of the road restraint standards used as required by applicable Dft or Transport Scotland guidance.	Discussed at section 6 DAS 29/10/08, SDS confirmed that a road restraint was now included in design.		closed		
6	07-2.6	20/01/2009	A depot building and site services plan is to be provided detailing the provision and functionality of heating, ventilation, extraction, water, power, fire strategy and security services within the depot.	Detailed in Depot Requirements specification ULE90130-SW-SW-SPN-00057 v2		closed		
6	07-2.7	20/01/2009	The current heating and ventilation drawings do not have keys therefore it is unclear what HVAC equipment is being provided in each room. Confirm heating, ventilation and air conditioning arrangements for the ground and first floor rooms.	ULE90130-06-DEP-00303 v5 shows a key for heating design.		closed		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-2.8	20/01/2009	Confirm the location of insulated block joints and that a tram stopping at normal locations required by operations e.g. to set points, will not bridge the IBJ.	OLE requirements are to be marked on track drawings	BSC	Open		
6	07-2.9	20/01/2009	Detailed proposals are required for the electrical and safety Interlocking scheme for depot OLE and workshop equipment and live line indication.	Discussed at depot workshop 25/02/09, Siemens to follow up		Transfer		
6	07-2.10	20/01/2009	Confirm the drainage layout design and strategy for the depot site. The available drawing ULE90130-06-DEP-00480 v1 is stamped 'work in progress' however it does not show the bogie wash point linked into the depot drainage system.	ULE90130-06-DEP-00460 v3 shows connection of the bogie wash point to the foul water drain		closed		
6	07-2.11	20/01/2009	Confirm whether any of the depot pits will have drainage facilities or will the drainage points shown at the depot workshop entrances be sufficient to prevent the pits collecting rain water (ER section 29.12).	Depot pits will have sump facilities, drainage via portable pumps, discussed at depot workshop 25/02/09		closed		
6	07-2.12	20/01/2009	We suggest that a PA facility around depot building and site would be extremely useful for all parties working within the depot site. This has been provided in the depot at Croydon tramway and is used regularly by the control room there to contact operational staff, technicians and managers.	Discussed at depot workshop 25/02/09. PA system in Siemens scope, TSL to provide spec for what system needs to achieve, tie to progress with TSL and maintainer in separate discussion	TSL	Transfer		
6	07-2.13	20/01/2009	The depot building layout drawings do not show a dedicated computer server room for Infraco/Tramco/operator. Is it therefore the intention that the computer servers will be located in the equipment room?	Discussed at Comms design review meeting 23/03/09, TSL to provide Siemens with requirements for space.	TSL	Transfer		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-2.14	20/01/2009	We suggest that in order for the tram maintainer to carry out fleet checks of the pantograph or roof it would be useful to have a CCTV camera within the depot site that can be occasionally positioned to view the tram roof/pantographs on one of the tram entrance roads or on the tram wash road. Would it be possible with the current configuration of external cameras, the intention being that this provision would utilise the existing cameras rather than requiring a dedicated camera?	Discussed at depot workshop 25/02/09, To be reviewed once camera coverage study submitted	BSC	Open		
6	07-2.15	20/01/2009	An electrical services plan is to be provided to include details of the services within the depot which will be fed from the UPS(s) and also the standby generator connection.	Discussed in depot workshop 25/02/09. For UPS see detailed design submission Control Centre UPS	BSC	Transfer		
6	07-2.16(1)	20/01/2009	Video link to reception and control room at the visitor entrance door rather than staff entrance door.	Discuss at Depot Workshop	TSL	Open		
6	07-2.16(2)	20/01/2009	At the staff halt provide intercom at the gate rather than in the shelter and a card reader as per other pedestrian gate.	Discuss at Depot Workshop	TSL	Open		
6	07-2.16(3)	20/01/2009	The object/person detector at tram gates (ER requirement), may not be necessary; CCTV and locking gates after run-in/out should be adequate.	Discussed at DAS meeting 29/10/08, SDS confirmed that CCTV is the object detector.		closed		
6	07-2.16(4)	20/01/2009	Access control to the equipment room	Discuss at Depot Workshop	TSL	Open		
6	07-2.16(3)	20/01/2009	CCTV camera with a view between the trams on the stabling road and also north perimeter fence (see also 1.11)	refer to 1.11		closed		
6	07-2.16(3)	20/01/2009	Review requirement for internal CCTV cameras (see also 1.12)	refer to 1.12		closed		
6	07-2.16(3)	20/01/2009	Door key suiting	Discuss at Depot Workshop	TSL	Open		

Section	ODR Ref	Date of ODR	Issue identified at ODR	Update and Action	Who	Status	Action by Date	Close Date
6	07-2.17	20/01/2009	The current revision of the depot track vertical and longitudinal alignment drawings are out of date (ULE90130-06-TAL/TVA revision 3)	ULE90130-06-TAL-00001 v5 & 00002 v4 are current		closed		
6	07-2.18	20/01/2009	The ground floor layout design shows separate stores for Tramco and Infraco. Transdev require access to a small area of the stores mainly for storage of tram/infrastructure/depot cleaning equipment and consumables, point bars, spare radios, spare ticket machines, batteries, marketing information, tram boards, operational signs, incident response equipment etc. Would BSC consider either having general stores for use by everyone working in the depot or allocating a small area in one of the light stores for the operator's use?	Discussed at depot workshop 25/03/09		Transfer		
6	07-2.19	20/01/2009	Is there a risk with the fork lift truck driving over the tram wash sump covers in order to access the swarf bins?	Following details of Tramwash design to be reviewed	BSC (SDS)	Open		
6	07-2.20	20/01/2009	Allocation of services and equipment between the power energy centre, UPS room and switch rooms, could additional internal depot space be created by relocating more of the services and equipment into the power energy centre?	Discussed at section 6 DAS meeting 29/10/08. SDS/tie conformed that changes to allocation would be unfeasible at this stage.		closed		