

## APPENDIX 4: IDC CERTIFICATE

BSC Infraco for

IDC Certificate

ETN, Edinburgh Tram Network

 **BILFINGER BERGER**  

BSC/25.1.201/PSP/003\_4  
Revision A, Date 2009/06/23

### IDC Certificate

Workshop for Section:

Date:

Drawing/Document	No.:		
	Title:		
Overall	Required for IDC	Lots / Discipline Representative	
		Name	Signature
Accommodation Work			
Ducting			
Drainage			
Depot			
Environment			
Geotechnical			
Substations			
Landscaping			
Street Lighting			
Utilities			
Tramstops			
Roads			
Track Superstructure			
Structures Bridges			
Structures Retaining Walls			
RST			
Traffic Light Control			
Trackwork			
Railway Electrification			
Signalling			
Communication			
SCADA			
Depot Workshop Equipment			
Maintenance Infrastructure			
Maintenance Rolling Stock			
CPS			
System Integration Manager			

IDC Certificate

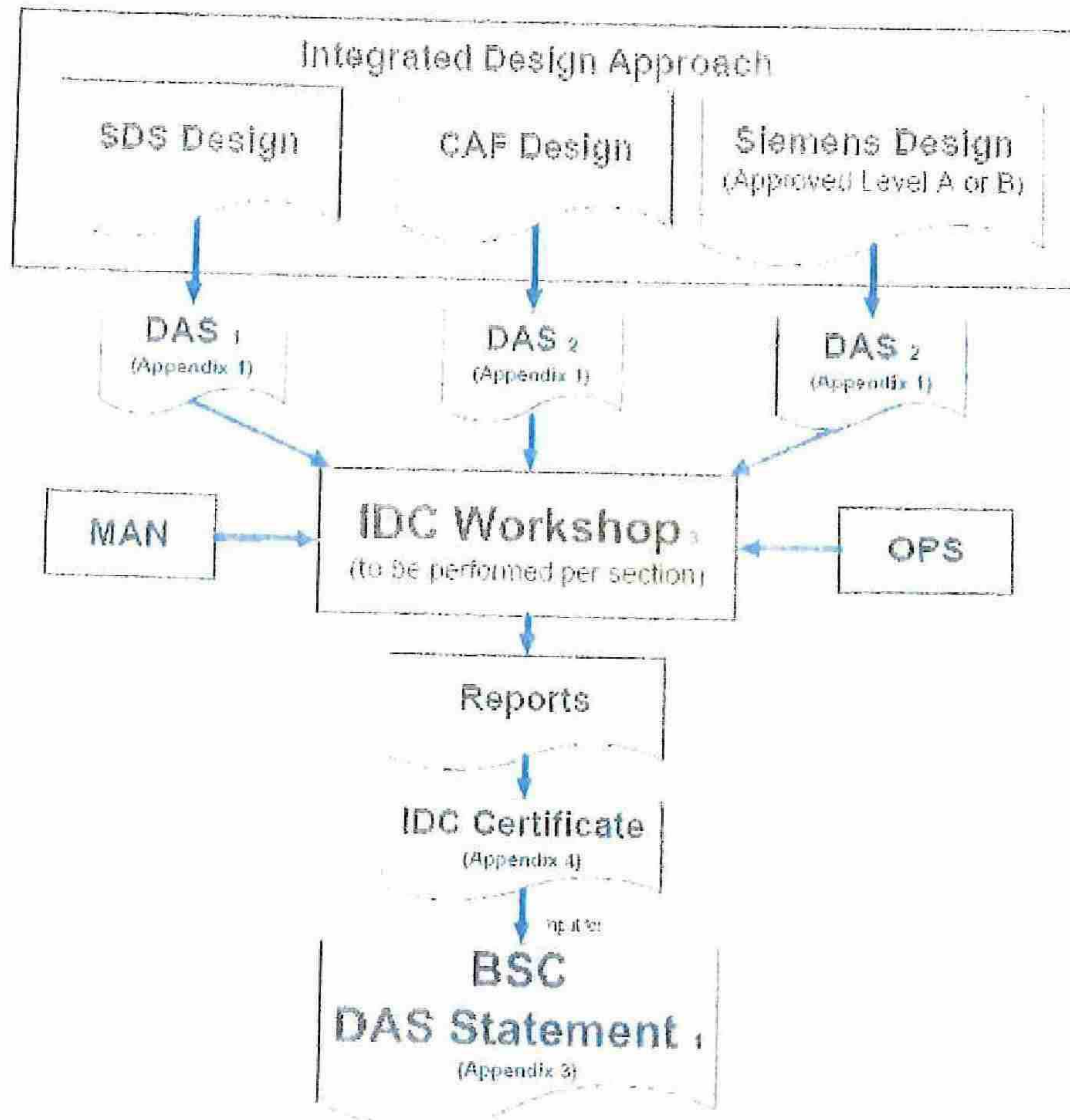
Confidentiality: non confidential

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## APPENDIX 5: IDC PROCESS

### Interdisciplinary Design Check (IDC) Process



Abbreviations:  
 DAS - Design Assurance Statement  
 IDC - Interdisciplinary Design Check  
 ICP - Integrated Design Permit  
 MAN - Maintenance  
 OPS - Operator  
 SIM - System Integration Manager

- 1 - Statement given per section
- 2 - Statement given per lot / discipline, sectionwise application to be evaluated in IDC Workshop
- 3 - Parties for IDC Workshop to be nominated by SIM, ICP and the ICP invited to join the workshop



# Edinburgh Tram System Design Services

Presentation to *tie May*  
*2007*



# Summary

- ❖ **PB Quality Management System**
- ❖ **Suppliers & Subcontractors**
- ❖ **Design Production**
- ❖ **Design Assurance and Approval**



# **PB Quality Management System**

- ❖ **The PB Quality Management System**
- ❖ **Application to the SDS project**
- ❖ **Monitoring & Audit regime**



# PB Quality Management System

- ❖ The objectives of our quality program are:
  - *Right First Time*
  - *Robustness*
  - *Continuous Improvement*



# PB Quality Management System

- ❖ **Quality results begin with a common understanding of:**
  - *Scope (what we're trying to achieve and the component parts of the delivery)*
  - *Execution plan (who, when, where, how)*
  - *The applicable standard (what is success and how do we know we've achieved it)*
  - *Legislative Requirements*
  - *Client inputs*
  - *3rd party inputs*



# **PB Quality Management System**

**The process and proposals for assurance of quality:**

- ❖ **are part of PB's standard offering,**
- ❖ **Tailored and adapted for the SDS project**
- ❖ **were included in our original submission to tie,**
- ❖ **Provides a Design Assurance Statement (DAS)**



# **PB Quality Management System**

**PB's normal processes are based upon:**

- ❖ documented generic and customised procedures and processes**
- ❖ Focus on processes and procedures that “work”**
- ❖ being managed in, monitored, audited and continually improved.**



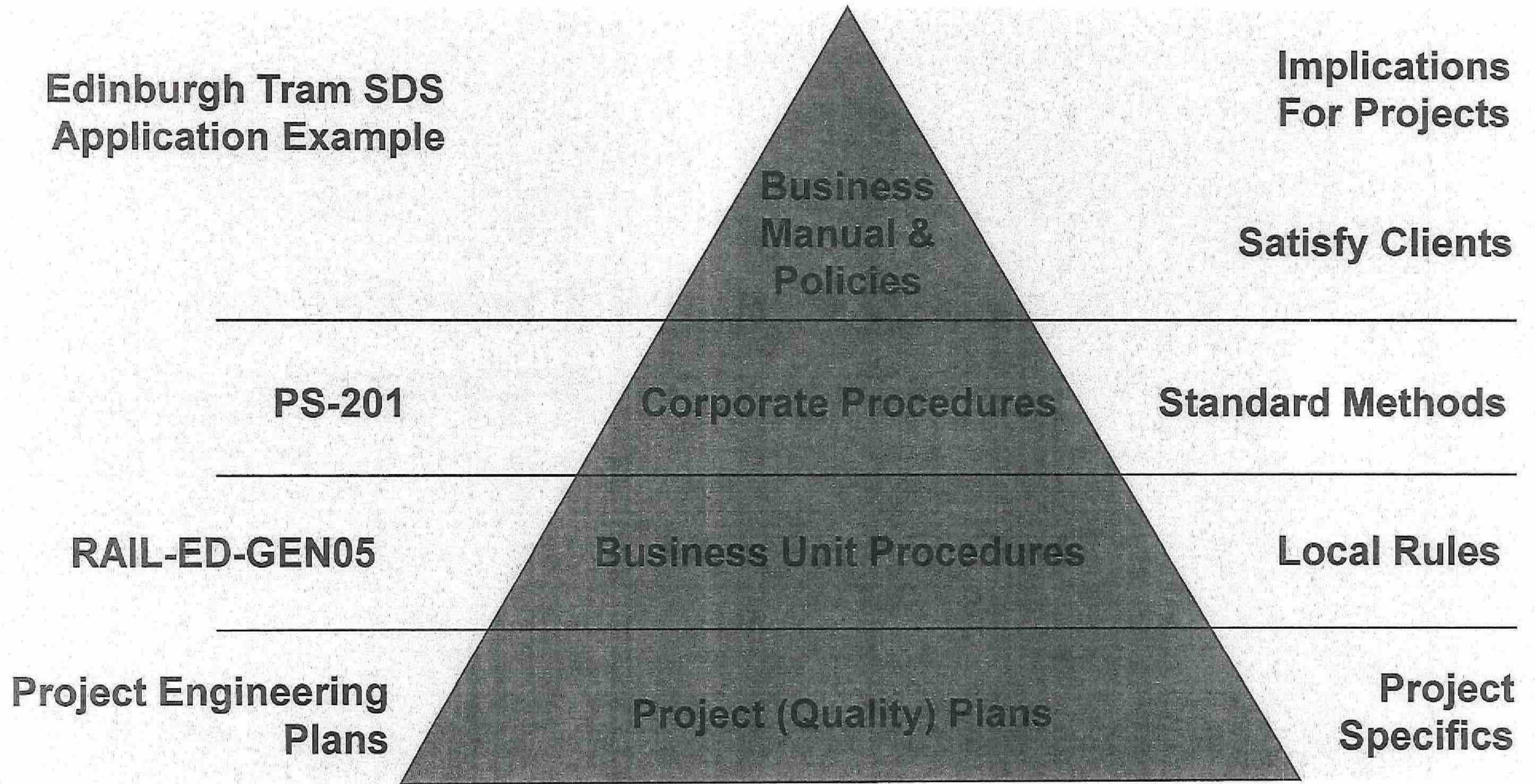
# **PB Quality Management System**

**PB procedures and processes exist at:**

- ❖ Corporate level**
- ❖ Business Unit level**
- ❖ Edinburgh Tram SDS Project level**

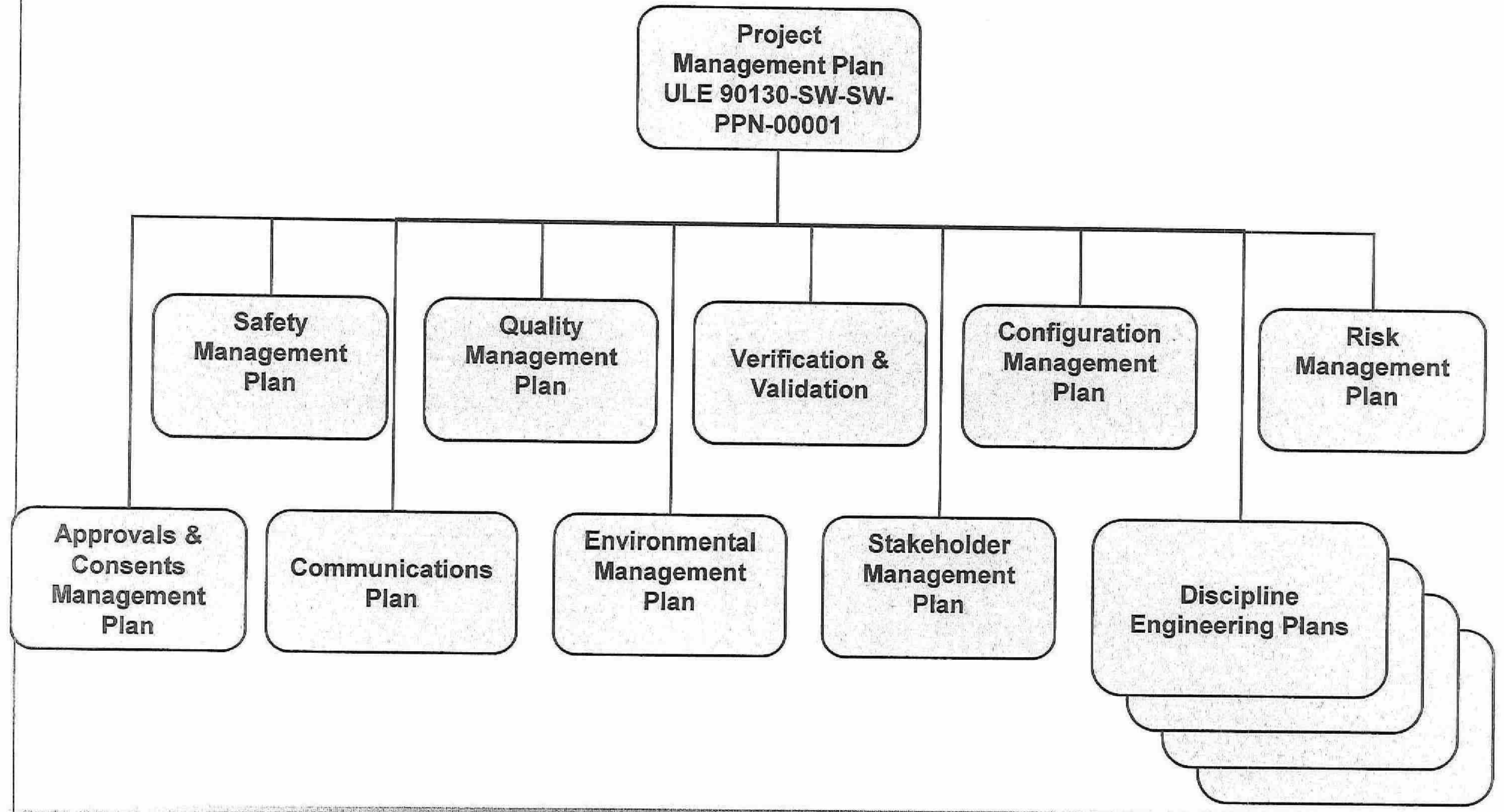


# PB Quality Management System





# ETN Quality Management System



CEC02087170\_0180



# **PB Quality Management System**

## **❖ Change Control**

- *Project Change Control Procedure ULE  
90130-SW-SW-PRE-00007*
  - Change Control Database
  - Right First Time
  - Robustness
  - Continuous Improvement



# **PB Quality Management System**

**Our management/monitoring & auditing regime includes:**

- ❖ Communication**
- ❖ Implementation**
- ❖ Involvement**
- ❖ Auditing**



# **PB Quality Management System**

## **❖ Monitoring & Audit regime**

- *Internal audit of design teams***
- *System in place for tracking NCRs & CARs***
- *PB Senior Management Team review***
- *"local" management overview***
- *audits of project office and regional design offices***
- *Backed up by External (UL) audits of PB Quality Management System***
- *Feedback and corrective action***
- *Continual improvement***



# **PB Quality Management System**

## **SDS Project Process examples**

- **Interdisciplinary Check (IDC) ULE90130-SW-  
PRE-00005**
- **Intermediate Design Review (IDR) ULE90130-  
SW-PRE-00034**
- **Discipline Engineering Plans,**
- **Outline Project Specifications**
- **Exemplar submissions**
- **Preparation of monthly reports**
- **Programme updates**
- **Document Control Procedure ULE 90130-SW-  
SW-PRE -00001**



# **PB Quality Management System**

## **❖ Vendors/Sub-contractor**

### **Assessments**

- *Approved Suppliers Database*
- *Pre qualification questionnaires*
- *Performance records*
- *Audits and inspections*
- *PB Corporate Procedure (CP 202)*



# Design Assurance and Approval

## Design Approval

- ❖ Planning approvals
- ❖ *tie* approval
- ❖ CEC approval



# Design Assurance and Approval Design Delivery and WBS

Section 1 Design

Subsection 1A Design

Subsection 1B Design

Subsection 1C Design



# Design Assurance and Approval Design Delivery and WBS

Section 1 Design

Section 1A Design

Tramstop Element Design

Structures Element Design

Substructures Element Design

Subsection 1B Design

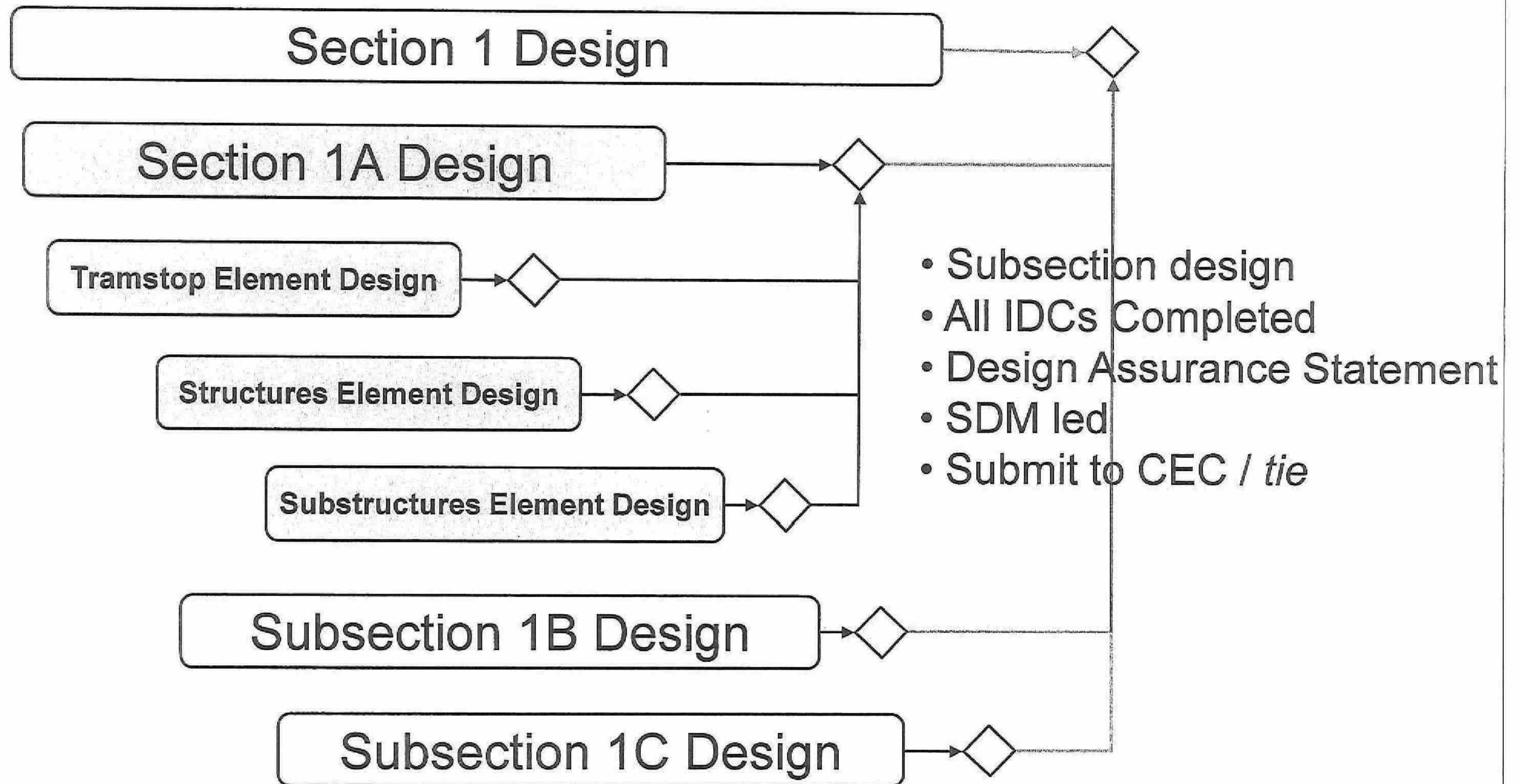
Subsection 1C Design





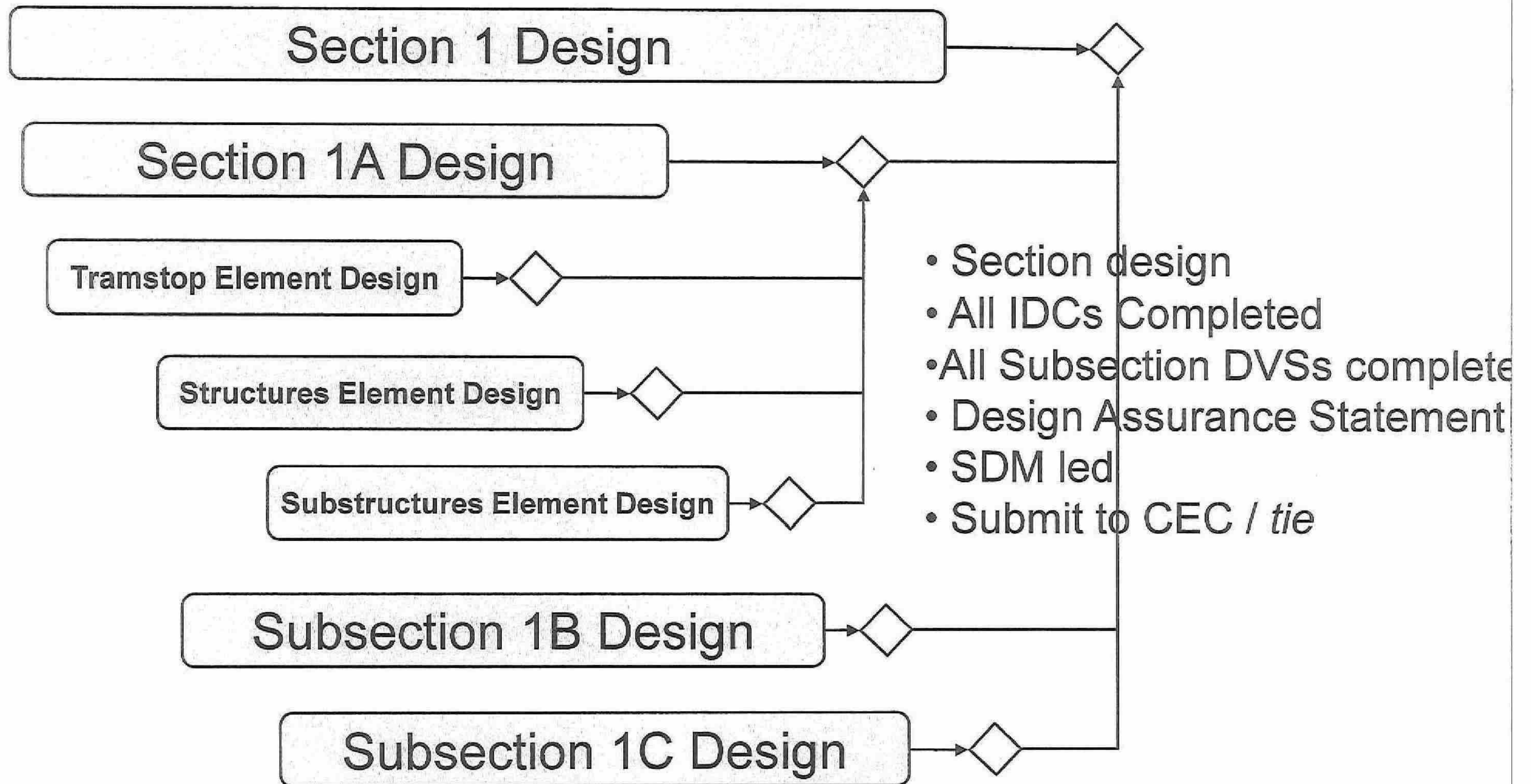


# Design Assurance and Approval Design Delivery and WBS



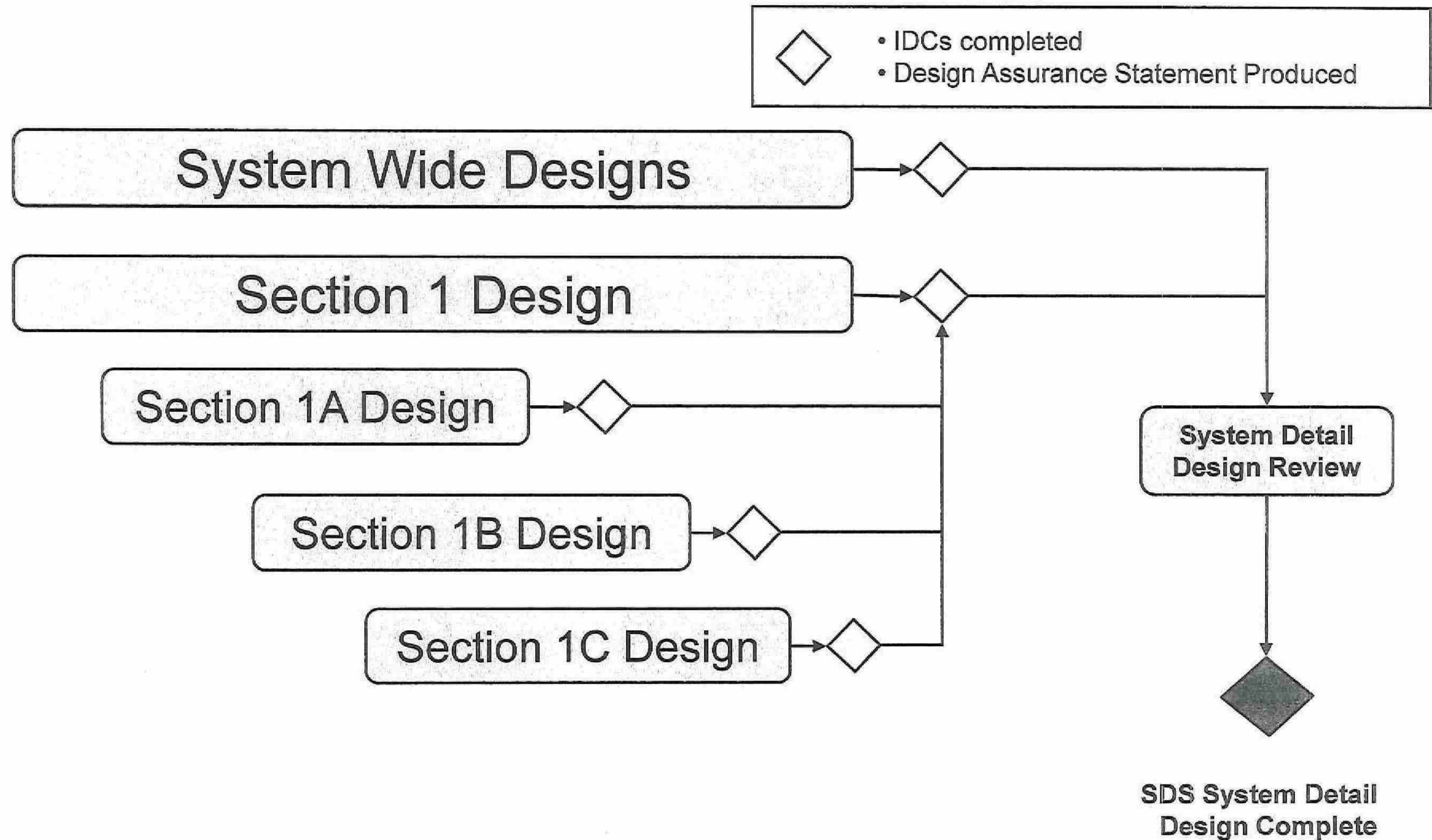


# Design Assurance and Approval Design Delivery and WBS



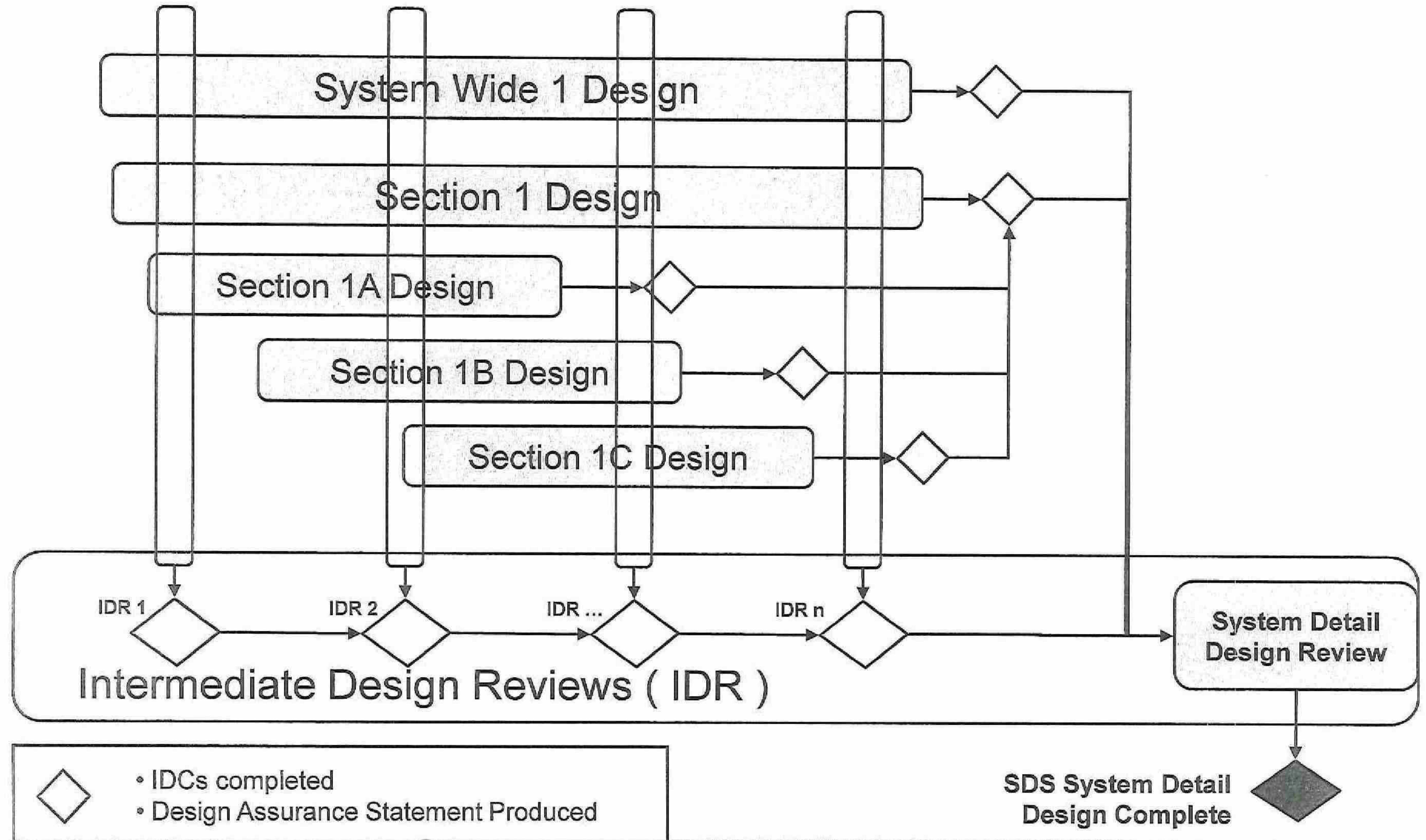


# Design Assurance and Approval SDS Detail Design Phase Process





# Design Assurance and Approval SDS Detail Design Phase Process





# Summary

- ❖ **PB Quality Management System**
- ❖ **Suppliers & Subcontractors**
- ❖ **Design Production**
- ❖ **Design Assurance and Approval**

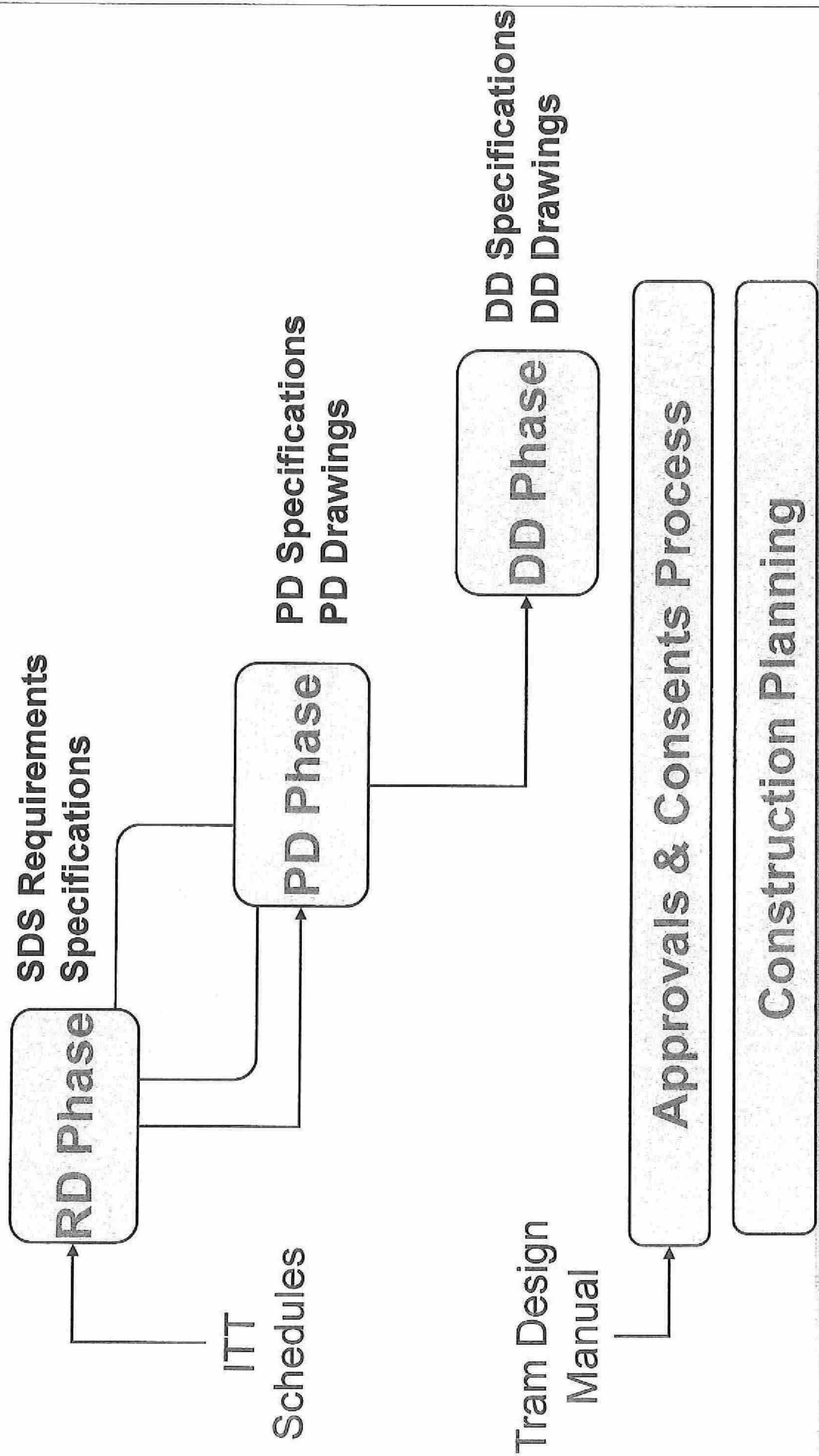


# Design Assurance and Approval

- ❖ Design Lifecycle
- ❖ IDR process
- ❖ IDC process
- ❖ System Detailed Design Review (SDDR) Process
- ❖ Progressive Self Assurance
- ❖ Planning Approvals
- ❖ tie / CEC design Approval
- ❖ 3<sup>rd</sup> Party Approvals and Consents Tracker



# Design Assurance and Approval Design Lifecycle





# Design Assurance and Approval

- ❖ Design Delivery and WBS
  - *Elemental submissions*
  - *Subsection Submissions*
  - *Section Submissions*
  - *Scheme wide submissions*

2/1/2017



# Design Assurance and Approval

## ❖ SDS Detail Design Phase Process

- *Structured assurance evidence*
- *Progressive self assurance*
- *Assurance against the requirement specs*
- *Assurance against relevant industry standards*
- *Section Design approval*
- *Overall Tram Network System design approval*
- *Design Assurance Statement*
- *Case for Safety*



# **Design Assurance and Approval Key Assurance activities**

- ❖ **Intermediate Design Reviews**
- ❖ **Drawing reviews and sign off**
- ❖ **Document reviews and sign off**
- ❖ **Interdisciplinary Checks**
- ❖ **Design Assurance Statements**
- ❖ **System Detail Design Review**



# **Design Assurance and Approval Trackers**

- ❖ **Approvals & Consents Tracker**  
**ULE90130-SW-SW-PPN-00007**
- ❖ **Design Issues Tracker**
  - ***ULE90130-SW-RRR-00005***
  - ***ULE-90130-SW-SCH-00029***
  - ***ULE90130-03-SCH-00002***



# **Design Assurance and Approval IDC Process**

- ❖ Procedure ULE90130-SW-PRE-00005
- ❖ DTL ownership
- ❖ Completion of discipline design
- ❖ DTL confirms IDC review team
- ❖ Issue IDC formally through DMS
- ❖ Review period
- ❖ Notification of issues received from review team
- ❖ Meeting / conference call to review
- ❖ Amendment of design
- ❖ Re-issue
- ❖ Sign off IDC form, place in DMS.



# DAS Submission Programme

Activity ID	Activity Name	Original Duration	Start	Finish
<b>ULE90130 SDS Edinburgh Tram V14</b>				
<b>ULE90130 SDS Edinburgh Tram V14</b>				
	Haymarket to Newhaven Road - Section 1 (Task300)	82.0d	28-Jun-07	02-Nov-07
	FOW - NER - Section 1A (Task300.2)	40.0d	31-Aug-07	28-Oct-07
	Sub Section Wide	5.0d	31-Aug-07	06-Sep-07
	Design Verification Review	1.0d	31-Aug-07	04-Sep-07
	Produce Design Verification Statement	1.0d	31-Aug-07	05-Sep-07
	MDR - FOW - Section 1B (Task300.3)	5.0d	28-Sep-07	02-Oct-07
	Sub Section Wide	5.0d	28-Sep-07	02-Oct-07
	Design Verification Review	1.0d	28-Sep-07	02-Oct-07
	Produce Design Verification Statement	1.0d	28-Sep-07	02-Oct-07
	PSW - MDR - Section 1C (Task300.4)	5.0d	18-Oct-07	23-Oct-07
	Sub Section Wide	5.0d	18-Oct-07	23-Oct-07
	Design Verification Review	1.0d	18-Oct-07	22-Oct-07
	Produce Design Verification Statement	1.0d	18-Oct-07	22-Oct-07
	HAY - PSW - Section 1D (Task300.5)	5.0d	03-Oct-07	09-Oct-07
	Sub Section Wide	5.0d	03-Oct-07	09-Oct-07
	Design Verification Review	1.0d	03-Oct-07	08-Oct-07
	Produce Design Verification Statement	1.0d	03-Oct-07	08-Oct-07
	Haymarket to Roseburn Junction - Section 2 (Task400)	5.0d	28-Jun-07	04-Jul-07
	HAY - ROJ - Section 2A (Task400.2)	5.0d	28-Jun-07	04-Jul-07
	Sub Section Wide	5.0d	28-Jun-07	04-Jul-07
	Design Verification Review	1.0d	28-Jun-07	04-Jul-07
	Produce Design Verification Statement	1.0d	28-Jun-07	04-Jul-07
	Haymarket to Granton Square - Section 3 (Task500)	22.0d	05-Jul-07	02-Aug-07
	ROJ - CRT - Section 3A (Task500.2)	6.0d	05-Jul-07	10-Jul-07
	Sub Section Wide	6.0d	05-Jul-07	10-Jul-07
	Design Verification Review	1.0d	05-Jul-07	10-Jul-07
	Produce Design Verification Statement	1.0d	05-Jul-07	10-Jul-07
	CRT - CAP - Section 3B (Task500.3)	5.0d	20-Jul-07	26-Jul-07
	Sub Section Wide	5.0d	20-Jul-07	26-Jul-07
	Design Verification Review	1.0d	20-Jul-07	26-Jul-07
	Produce Design Verification Statement	1.0d	20-Jul-07	26-Jul-07
	CAP - GRS - Section 3C (Task500.4)	5.0d	27-Jul-07	02-Aug-07
	Sub Section Wide	5.0d	27-Jul-07	02-Aug-07
	Design Verification Review	1.0d	27-Jul-07	02-Aug-07
	Produce Design Verification Statement	1.0d	27-Jul-07	02-Aug-07
	Roseburn Junction to Gogarburn - Section 5 (Task700)	91.0d	10-Aug-07	02-Nov-07
	ROJ - BAR - Section 5A (Task700.2)	5.0d	30-Oct-07	05-Nov-07
	Sub Section Wide	5.0d	30-Oct-07	05-Nov-07
	Design Verification Review	1.0d	30-Oct-07	05-Nov-07
	Produce Design Verification Statement	1.0d	30-Oct-07	05-Nov-07
	BAR - EDP - Section 5B (Task700.3)	5.0d	06-Sep-07	12-Sep-07
	Sub Section Wide	5.0d	06-Sep-07	12-Sep-07
	Design Verification Review	1.0d	06-Sep-07	12-Sep-07
	Produce Design Verification Statement	1.0d	06-Sep-07	12-Sep-07
	EDP - GOG - Section 5C (Task700.4)	5.0d	10-Aug-07	16-Aug-07
	Sub Section Wide	5.0d	10-Aug-07	16-Aug-07
	Design Verification Review	1.0d	10-Aug-07	16-Aug-07
	Produce Design Verification Statement	1.0d	10-Aug-07	16-Aug-07
	GDE DEPOT - Section 6 (Task870)	5.0d	18-Jul-07	20-Jul-07
	GDE DEPOT - Section Wide	5.0d	18-Jul-07	20-Jul-07
	Design Verification Review	1.0d	18-Jul-07	20-Jul-07
	Produce Design Verification Statement	1.0d	18-Jul-07	20-Jul-07
	Gogarburn to Edinburgh Airport - Section 7 (Task800)	5.0d	02-Aug-07	08-Aug-07
	GOG - AIR - Section 7A (Task800.2)	5.0d	02-Aug-07	08-Aug-07
	Sub Section Wide	5.0d	02-Aug-07	08-Aug-07
	Design Verification Review	1.0d	02-Aug-07	08-Aug-07
	Produce Design Verification Statement	1.0d	02-Aug-07	08-Aug-07



# **DESIGN ASSURANCE STATEMENT PURPOSE**

- ❖ **Provide a summary of the submission**
- ❖ **Statement that design is fit for purpose**
- ❖ **Exceptions are declared in an easily retrievable manner**
- ❖ **Facilitates Review Process**
- ❖ **Provides confidence of self assurance management**



# DAS Process

- ❖ **Managed by SDM's**
- ❖ **Disseminated to DTL's et al for input**
- ❖ **Provided with each subsection design submission**
- ❖ **Where applicable references required for each statement**
  - Drawing/document references
  - System Wide impact references
  - CDM information
- ❖ **Exceptions/Deviations detailed in appropriate section of DAS**
- ❖ **References where risks/hazards remain open**
- ❖ **Guidance notes included**
- ❖ **Signed off by SDM, Design Manager and Project Manager**



# DAS Example

## APPENDIX 1 - EDINBURGH TRAM NETWORK DESIGN ASSURANCE STATEMENT

(For clarification refer to guidance notes attached)

<p>a) SUBMISSION DETAILS / TITLE: Section / Sub-Section to which this Certificate Relates: (7) Date of Issue: (8)</p>	<p>b) Summary of Section / Sub-Section Submission: (9)</p>	<p>c) Submission Specific Design Documents: (10)</p> <p>Have all Submission Specific Design Documents been reviewed, approved and under version control (in Hummingbird)? Yes <input type="checkbox"/> No <input type="checkbox"/> Comments</p>	<p>d) Submission Specific Drawings: (11)</p> <p>Have all Submission Specific Design Documents been reviewed, approved and under version control (in Hummingbird)? Yes <input type="checkbox"/> No <input type="checkbox"/> Comments</p>	<p>e) Applicable System-Wide Drawings and Documents: (12)</p> <p>Have all applicable System-Wide Drawings and Documents been reviewed, approved and under version control (in Hummingbird)? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
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# DAS Completed Example

## APPENDIX 1 - EDINBURGH TRAM NETWORK DESIGN ASSURANCE STATEMENT

a) **SUBMISSION DETAILS / TITLE:** Sub-Section 5C design Assurance Statement v1  
**Section / Sub-Section to which this Certificate Relates:** (7) 5C  
**Date of Issue:** (3) 08<sup>th</sup> May 2007

b) **Summary of Section / Sub-Section Submission:** (9)

Section 5C is 1.9km long and runs from Edinburgh Park Stop (exclusive) to Gogarburn Stop (inclusive). The track is segregated through the Edinburgh Park Development area with one signalised Road crossing at Lochside Avenue. The track is then segregated, until another signalised roads crossing at South Gyle Broadway, heading towards the Gyle centre. The tram is segregated for the remainder of the section, running parallel to the Gyle shopping centre where there is a tram stop, before running underneath the A8 road. The tram route then branches off into the Depot (Section 6 – a separate submission) and Section 5C alignment continues west along a retaining structure and then at grade through existing farmland until it reaches the Gogarburn tram stop.

There are two tramstops in the section, Gyle and Gogarburn. There are no substations. There are two structures, Gyle Tramstop retaining wall (W19) and A8 Underpass (S28) in the subsection.

Drainage, Landscaping and Utilities design form part of this technical submission.

TRC - It is planned to produce a draft TRC for the whole LCD following completion of the PDC design. This is a separate submission to this one.

TTRC - There are 2 TTRCs one to cover the MUDFA works and a second to cover the INFRACC works, the MUDFA TTRC has been completed. This is a separate submission to this one.

c) **Submission Specific Design Documents:** (10)

### Roads

- Section 5C (Edinburgh Park to Gogarburn) Roads Technical Design Statement – Detailed Design (ULE90130-05-REP-00201 V1). [Issued to tie 19 February 2007 in Transmittal No. ULE90130-SW-DTF-01425].
- Roads Design Specification Department of Transport Manual of Contract Documents for Highways Works: Appendix 11/1: Kerbs, Footways, Cycleways, Laybys, Busbays and Paved Areas (ULE90130-SW-SPN-00087 V2). [Issued to tie 19 February 2007 in Transmittal No. ULE90130-SW-DTF-01425].
- Roads Design Specification Department of Transport Manual of Contract Documents for Highways Works: Appendix 12/1: Traffic Signs: General (ULE90130-SW-SPN-00088 V2). [Issued to tie 19 February 2007 in Transmittal No. ULE90130-SW-DTF-01425].
- Section 5C - Temporary Traffic Management Plan (ULE90130-SW-REP-00258 V1) [Issued to tie 9 October 2006 in Transmittal No. ULE90130-SW-DTF-00567].
- Roads Safety Audit Brief – Stage 1 Sections 2, 3, 4, 5, 6 & 7 (ULE90130-SW-REP-00159). [Issued to tie 15 September 2006 in Transmittal No. ULE90130-SW-DTF-00772].

### Street Lighting

- Roads Design Specification Department of Transport Manual of Contract Documents for Highways Works: Appendix 14/1: Street Lighting (ULE90130-02-SCH-00002 V2). [Issued to tie 19 February 2007 in Transmittal No. ULE90130-SW-DTF-01425].

### Site Clearance

- Department of Transport Manual of Contract Documents for Highways Works: Appendix 2: Site Clearance (ULE90130-SW-SPN-00090 V3). [Issued to tie 19 March 2007 in Transmittal No. ULE90130-SW-DTF-01555].



# DAS Completed Example

<p>g) Requirements Test Specification: Compliance of technical specification with Client needs/defined requirements (14):</p> <p>Compliance of technical specification with Client needs/defined requirements. Are the relevant Requirements Test Specification entries populated with the required compliance entries?</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Comments</p> <p>The Requirements Test Specification will not be completed for this early submission as the demonstration of compliance against the requirements is an ongoing, progressive assurance that cannot be completed until all designs are completed. The Requirements Test Specification will be completed and submitted with the final design assurance statement.</p>
<p>h) Deviations and Non-Conformances including SDS requirements documentation: (15):</p> <p>Detail relevant deviations' and non conformances</p> <p>None identified to date</p> <p>Have all Deviations and Non-Conformances been approved and logged?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>N/A</p> <p>Comments</p>
<p>i) Applicable IDC Forms: (18):</p> <p>Track</p> <ul style="list-style-type: none"><li>• 'IDC - Track Section 5C Alignment Detailed Design'</li></ul> <p>Street Lighting</p> <ul style="list-style-type: none"><li>• 'IDC Form Section 5C Street Lighting'</li></ul> <p>[Note: Sub Section IDC for 5C will be complete for the 'real' submission]</p> <p>Do all IDC Forms contain no issues and have been correctly signed off?</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Track - No</p> <p>Comments</p> <p>Track - Recording of the resolution (or otherwise) of several IDC comments returned for the alignment design ('IDC - Track Section 5C Alignment Detailed Design') has not been completed on the IDC Form and its accompanying Document Review Report.</p> <p>[Note: This will be completed for the formal Design Assurance Submission for Section 5C]</p>



# Summary

- ❖ **PB Quality Management System**
- ❖ **Suppliers & Subcontractors**
- ❖ **Design Production**
- ❖ **Design Assurance and Approval**



EDINBURGH TRAM NETWORK  
 BBUK POSITION WITH TIE REVIEW COMMENTS  
 SUMMARY OF RESPECTIVE POSTIONS

ITEM	INFRACO		tie Review		Cons	
	BB	Siemens	BB	Siemens	BB	Siemens
HG 1	£5,120,000	£29,700,000	£1,500,000	£7,500,000		
	£34,820,000		£9,000,000			
HG 2	£5,120,000	£6,500,000	£2,700,000	£5,800,000		
	£11,620,000		£8,500,000			
						→ included £2.2 million Design
HG 2a (Part of PW below)	£2,150,000	£0	£1,350,000	£0		
	£14,000,000		£10,000,000			
Aux	£200,000		£200,000			
PW Value	£14,100,000	£10,000,000	£6,600,000	£10,000,000		
			+ Structures / Depot already executed			
PW Prelims	£7,200,000	£3,000,000	£5,000,000	£3,000,000		



EDINBURGH TRAM NETWORK  
 COMMERCIAL MEETING : INFRACO / TIE / CEC : 31 March 2011  
 SIEMENS

RE START UP COSTS	INFRACO PICTURE	TIE REVIEW COMMENTS																					
Material Assets (includes Engineering Input)	39,000,000 Headline (11,000,000) BAM T/W (3,000,000) Other Materials <u>25,000,000</u> Payment 1	Supply & Instal from Original CPA (Excluding 'Engineering Input') 70% is materials <table border="1" style="margin-left: 20px;"> <tr> <td>25,000,000</td> <td>£7,000,000</td> <td>Payment 1</td> </tr> <tr> <td>17,500,000</td> <td>£3,750,000</td> <td>Payment 2</td> </tr> <tr> <td><u>10,250,000</u></td> <td></td> <td></td> </tr> <tr> <td><u>27,750,000</u></td> <td></td> <td></td> </tr> <tr> <td>(14,000,000)</td> <td></td> <td></td> </tr> <tr> <td>(3,000,000)</td> <td></td> <td></td> </tr> <tr> <td><u>10,750,000</u></td> <td></td> <td></td> </tr> </table>	25,000,000	£7,000,000	Payment 1	17,500,000	£3,750,000	Payment 2	<u>10,250,000</u>			<u>27,750,000</u>			(14,000,000)			(3,000,000)			<u>10,750,000</u>		
25,000,000	£7,000,000	Payment 1																					
17,500,000	£3,750,000	Payment 2																					
<u>10,250,000</u>																							
<u>27,750,000</u>																							
(14,000,000)																							
(3,000,000)																							
<u>10,750,000</u>																							
Prelims (Not Received)	4,500,000 Payment 1	Prelims (Not Received) £0																					
Prelims (Under Recovery)	6,500,000 Payment 2	Prelims (Under Recovery) £0																					
		Restart Costs £500,000 Payment 1																					
		If Design Assurance Complete £2,000,000 Payment 2																					
Priority Works Systems	£25,000,000 less relevant materials allowance above	Period Valuation as works executed Process and Principles likely to be agreed. Values to be applied																					
Priority Works Prelims																							
Siemens	£494,000 per period	Seems reasonable																					



EDINBURGH TRAM NETWORK  
 BBUK POSITION WITH TIE REVIEW COMMENTS  
 BBCUK

RE START UP COSTS	INFRACO PICTURE	TIE REVIEW COMMENTS
Prelims (Not Received)	£10,240,000 £700,000 EOT included	Consider not underpaid at Period 38 based on D Murray Paper - £0
	£5,120,000 Payment 1 £5,120,000 Payment 2	£1,500,000 Payment 1 £500,000 Payment 2
Priority Works Prelims- Design - Ext CS	£500,000 per period (x4) £100,000 per period (x2)	£2,200,000 linked to completion of Design as completed
BBCUK (£300K original + £400K top up)	£700,000 per period	Seems reasonable Subject to check on volume of
Ramp Up (Aug / Sept) (Airport to Haymarket Scope)	£400,000 Aug / Sept	ditto
<b>Priority Works</b>		
Princes Street TM/Enabling Works	£550,000	<p>? - relates to P St TM Works</p>
Haymarket Yards	£875,000	
A8 (S28)	£750,000	
Depot Access Bridge	£518,000	
Depot - Building	£1,000,000	
Depot - External	£2,650,000	
Mini Test Track*	£600,000	
	£6,943,000	£4,800,000
		£1.7m relating to Depot
<b>Auxiliary Works</b>		
1A Maintenance	£105,000	
Testing 5A	£110,000	
Sewer Lining at Water of Leith	£70,000	
Demolition Plots 97/102	£100,000	
A8 Maintenance	£525,000	
Structures General	£3,540,000	
Depot	£2,000,000	
Site Clearance / Contamination Testing	£40,000	
<b>Target Price On Street Works</b>		
Testing of Subformation	£400,000.00	
Princes Street Outstanding Works	£350,000.00	Issue of principle over Structures / Depot £5,400,000



RESTART-UP COSTS

PRELIMS  
[NOT REC'D]

IN PERIOD

£10.24m  
[-£700k Est]

↳ £5.12m - Part 1  
£5.12m - Part 2

Review Comments

NUMBER NOT  
WELL PAD & PAD  
BASED ON D.M.  
PAGE  
→ £0

£15m Part 1  
£05m Part 2

PN PRELIMS

(INCLUDES DESIGN) £500k/period (x 4)  
+ £100k/period (x 2)

£1.2m LINKED  
TO COMPLETION  
OF DESIGN AS  
COMPLETED

BB [3000 R10  
+ 4000 T10] ~ £700k/period

SEEMS  
REASONABLE  
W/3500 T10  
CHECK ON  
VOLUME OF  
WORK

RAMP UP [AUG/SEPT] + £400k  
[AIR - HAT SCOPE] AUG/SEPT

PRIOR 17 WORKS

PRINCES ST.  
HATMARKET YARD  
A8 [S18]

£550k }  
£875k }  
£750k } £1975k ~ £4.8m

DEPT ACCENTRODES  
DEPOT - BUILDING  
- EXTERNAL  
MINI TEST TRACK

£518k }  
£1000k }  
£2650k } £4.7m

AUX  
1A W/TS  
TESTING SA  
SEWER & W/TS  
DEVELOPMENT  
AT W/TS  
STREET L22 SW  
W/TS  
SITE CLEARANCE/W/TS

Issue of principle  
over structure/  
DEPOT £5.5m  
£6375k  
+ £400k testing (T. SW)  
+ £200k O&M (T. SW)



<u>ITEM</u>	<u>INFRA</u>	<u>tie Pair</u>	<u>CONS</u>
Hg ①	BB S £5.12m £2.97m ~£35m	BB S £.5m £7.5m £9m	BB S

Hg ②	£5.12m £6.5m £11.6m	£2.7m £5.2m [£2.2m] £9.5m £1.55m 0.2m	
Hg (RA)	£2.15m (Part of PW Value) Avg. £4m 0.2m	£1.55m 0.2m	
<u>PW Value</u>	£4.1m ~£8m	£6.6m ~£10m [already deleted]	

PW Prelims £7.2m £3m £5m £3m



TIE REVIEW  
COMMENTS

SUPPLY & INSTALL  
FROM ORIG C.P.A.

[EXCLUDING 'ENG. INPUT']

25M  
70% is materials  
17.5  
+ 10.25  
27.75  
- 18.00  
= 9.75  
10.75M

47M Payment ①  
4375M Payment ②

PRELIMS [NG REQD]

£0

PRELIMS [UNDER REQUIREMENT]

£0

RESTART COSTS

£500k PAY ①

IF DESIGN ASSURANCE  
COMPLETE

£2000k PAY ②

PERIOD  
VALUATION  
AS WORK  
EXECUTED

PROCESS + PRINCIPLES  
LIKELY TO BE AGREED  
VALUES TO BE APPLIED

SEEMS REASONABLE



# INF LACO PICTURE

£39m Headline  
- £11m BAM T/W  
- £3m OTHER MATERIALS  
£25m  
£4.5m - PAYMENT ①  
£6.5m - PAYMENT ②

SUPPLY FROM  
[EXCLUDING

PREL  
PREL  
RE  
IF

[£25m - <sup>ESTIMATE</sup> MATERIALS ALLOWANCE  
ABOVE]

PERIOD  
VALUATION  
AS WORKS  
EXECUTED

£494k / Period



RE-STARTUP COSTS

MATERIAL ASSETS  
[INCLUDES ENGINEERING PARTS]

PRELIMS [NOT REC'D]

PRELIMS [UNDER REVIEW]

PRIORITY WORKS

SYSTEMS

PW PRELIMS

SIGNATURES



**Suzanne Smith**

---

**From:** Gregor Roberts [Gregor.Roberts@tie.ltd.uk]  
**Sent:** 04 April 2011 15:46  
**To:** csmith@hg-group.co.uk  
**Cc:** Richard Jeffrey  
**Subject:** FW: Hg Report attachments

Colin,

Richard asked that in Dennis's absence that I commented on the figures which you sent earlier on today. The PDF sheet collated and circulated materially reflects what was discussed in the meeting on Friday. Some comments which I would add are:

Siemens sheet

- \* Although not on the whiteboard (Infraco picture), it was noted by Axel that an estimated -£18m would come out of the systems priority works which relates to the materials payment which Siemens included in their proposed 'Payment 1'
- \* Although not on the whiteboard (tie review comments), but for context a comment should be added "less BAM T/W & Other materials" against the -£14m. Likewise a comment "Already installed/Certified" should be noted against the -£3m at the top of the page.
- \* For clarity, the £7m and £3.75m payments 1 & 2 should move down in-line with the £10.75m sub-total

BBCUK Sheet

- \* (Infraco picture) Against the Auxiliary works the Structures General number should be £3,400,000. The figure included on the sheet was incorrectly noted as £3,540,000 in the notes.
- \* The (Infraco picture) Auxiliary notes on the whiteboard had a sub-total of £6,375,000. This sub-total should be £6,350,000 with the amended £3.4m figure (there was a previous addition error of +£25k on the whiteboard)
- \* All of the tie comments noted look in-line with my expectations

Summary of Respective positions

- \* The summary picture reflects what was on the whiteboard. For accuracy, the HG2 Siemens number (tie review) section should read £5,750,000. This matches the back-up on the previous sheet and was only noted as £5.8m as a summary view on the whiteboard, this should be amended for clarity of the build-up, and the totals amended below.

Other than that I believe the summary to be a fair reflection of what was noted on the whiteboard at the meeting.

Regards,  
Gregor

Gregor Roberts  
Finance Director

Edinburgh Trams  
Citypoint  
65 Haymarket Terrace  
Edinburgh  
EH12 5HD



Edinburgh Tram Network

Re-Mobilisation Payments

breakdown of amounts for mobilisation, materials and equipment in relation to the Minute of Variation regarding the Prioritised Works Bilfinger Berger and Siemens are intending to enter into with CEC/ie  
(all values in GBP)

SIEMENS



Entity	Re-Mobilisation Payments Split between Bilfinger Berger and Siemens			TOTALS
	CERTIFICATE 1	CERTIFICATE 2	CERTIFICATE 3 <sup>1)</sup>	
Bilfinger Berger	7,500,000	5,000,000		12,500,000
Siemens	19,500,000	4,000,000	13,000,000	36,500,000
<b>TOTALS</b>	<b>27,000,000</b>	<b>9,000,000</b>	<b>13,000,000</b>	<b>49,000,000</b>

Notes:

1) Payable in three tranches (A, B and C)



Marin Forder on behalf of Bilfinger Berger Civil UK Ltd



Alfred Brändenburger on behalf of Siemens plc

Edinburgh, 01/04/2021

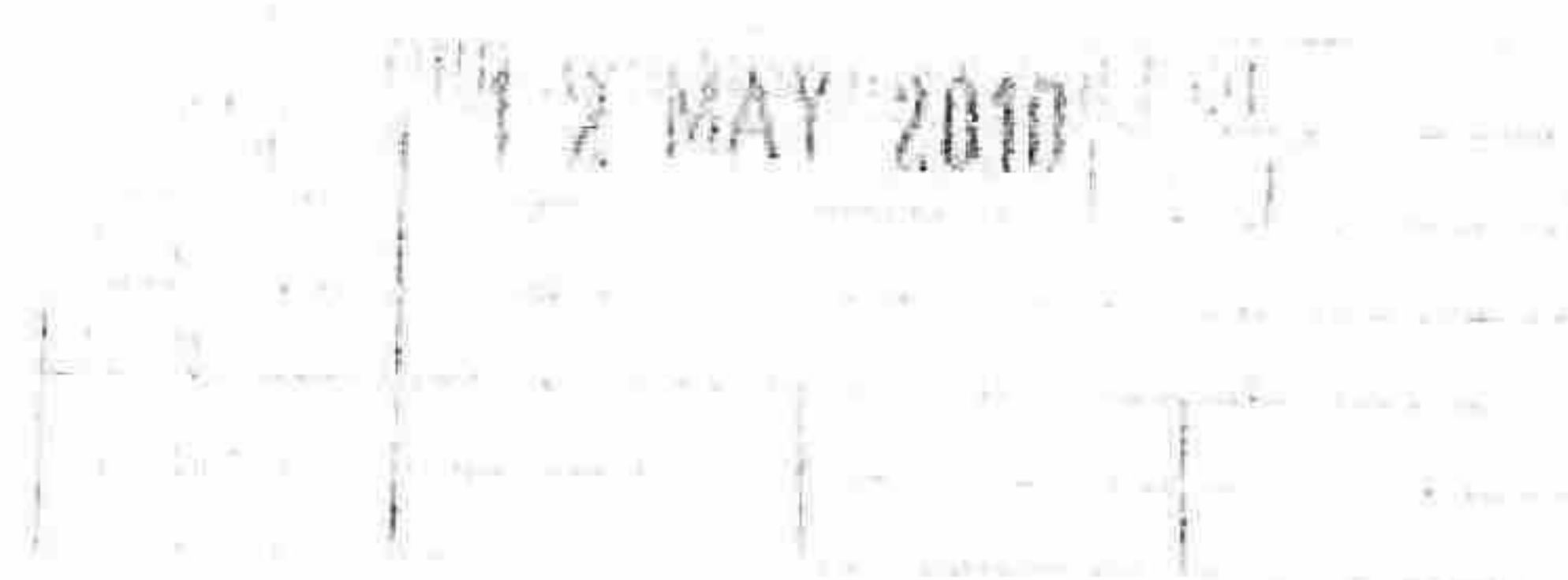
Appendix 17



Our ref: ETN(BSC)TIE\$C&ABC#080966

10 May 2010

tie limited  
CityPoint  
65 Haymarket Terrace  
Edinburgh  
EH12 5HD



Bilfinger Berger-Siemens- CAF  
Consortium

BSC Consortium Office  
9 Lochside Avenue  
Edinburgh Park  
Edinburgh  
EH12 9DJ  
United Kingdom

Phone: +44 (0) 131 452 2800  
Fax: +44 (0) 131 452 2990

For the attention of Steven Bell – Project Tram Director

Dear Sirs,

**Edinburgh Tram Network Infraco  
Vesting of Materials Stored at Broxburn**

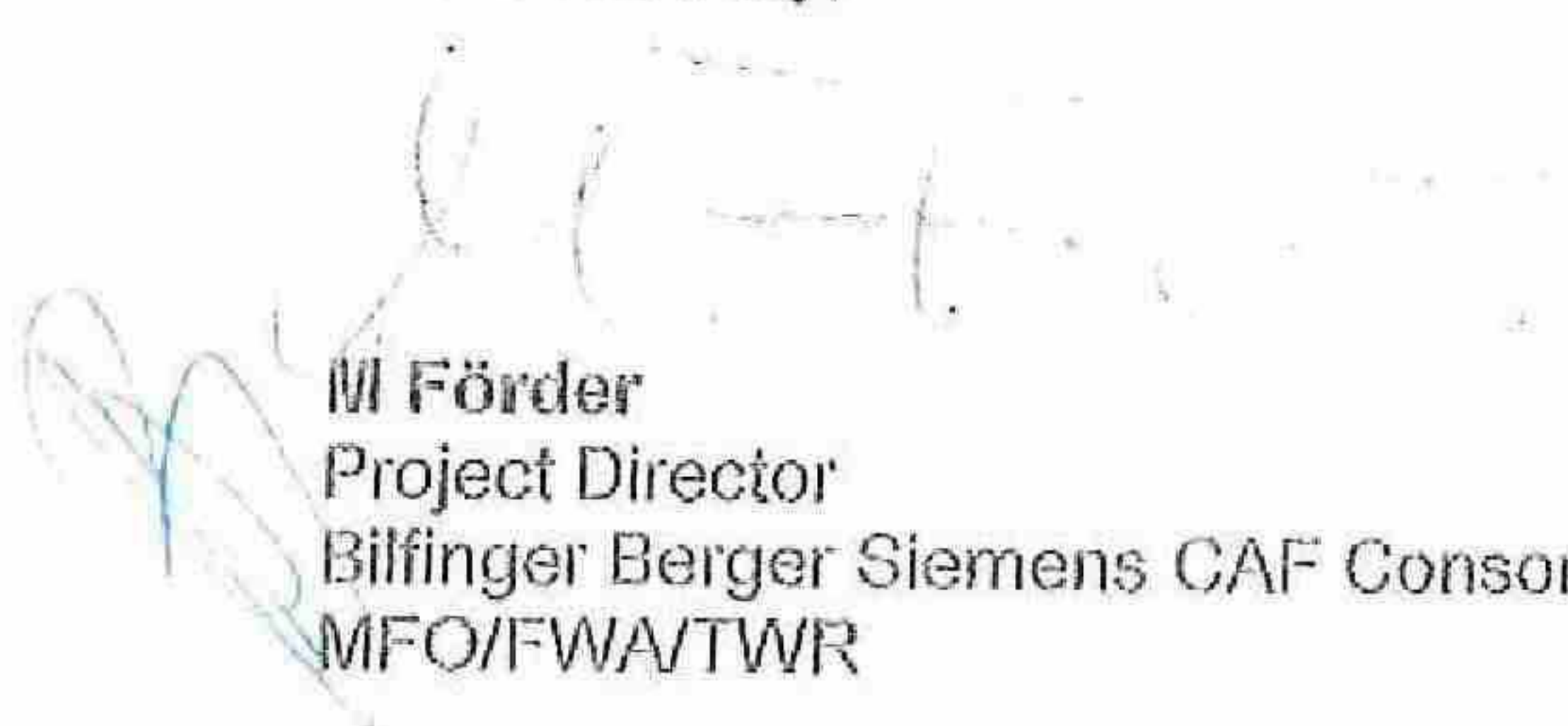
On 19 April 2010 Siemens provided by e-mail its proposed Certificate of Vesting to tie in respect of Materials and Parts in respect of traction power supply equipment stored by Siemens at its warehouse in Broxburn. Pursuant to the Certificate of Vesting Siemens shall transfer title in the Materials and Parts listed in Schedule 1 of the Certificate and property therein shall pass and vest absolutely with CEC.

Siemens consider that the execution of the aforesaid Certificate of Vesting will afford the following benefits:-

- Immediate vesting of title in favour of CEC in the aforesaid Materials and Parts absolutely and free from all security interests, encumbrances, charges or other third party rights;
- Avoidance in full of any possible entitlement or liability for future increased costs or finance costs whether by way of escalation or otherwise in respect of the value of such Materials and Parts, including but not limited to increased procurement costs, shipment and third party storage costs;
- Protection for CEC from third party rights;
- Increased control and flexibility over use, storage and inspection of Materials and Parts;
- Facilitation of future acceleration or mitigation measures;
- Evidence of discharge of obligations of tie in respect of 'best value'.

Siemens trust that the attached Certificate of Vesting meets with your approval and trust that tie will be a position to confirm its acceptance of the same in the near future. We propose to make appropriate deduction of the amount of the proposed interim payment from the Construction Milestones Payments identified as 'OLE' in Schedule Part 5 of the Infraco Agreement.

Yours faithfully,

  
**M Förder**  
Project Director  
Bilfinger Berger Siemens CAF Consortium  
MFO/FWATWR





Attachments: ETN(SPM)TIE=!PAB\$CF&ABD/#054022 TPS material values (on CD)  
Draft Certificate of Vesting of Materials

cc: Alejandro Urriza, CAF  
Kevin Russell, Bilfinger Berger  
Axel Eickhorn, Siemens  
Susanne Fersch, Siemens  
Patrick Scully, Siemens  
Alfred Brandenburger, Siemens



## CERTIFICATE OF VESTING OF MATERIALS

This Certificate is for the benefit of tie Limited (company number SC230949) for and on behalf as of the City of Edinburgh Council ("CEC"), whose registered office is at City Chambers, High Street, Edinburgh, Midlothian, EH1 1YJ ("tie") and relates to the vesting of the Materials and Parts described in Schedule 1 hereto attached and intended to form part of the Infraco Works in respect of the Edinburgh Tram Network.

We Siemens plc of Faraday House, Sir William Siemens Square, Frimley, Camberley, GU16 8QD, England, in consideration of tie's agreement to make payment under the Infraco Contract to Siemens of the sum of Five Million, Seventeen Thousand, Two Hundred and Ninety Seven Pounds and Seventy Two Pence (£5,017,297.72 (exclusive of VAT) on or before [INSERT DATE] in respect of the Materials and Parts, hereby warrant and undertake to tie that:-

- 1 the Materials and Parts listed in Schedule 1 are intended for incorporation in the Edinburgh Trams Network (the "Infraco Works");
- 2 nothing remains to be done to the Materials or Parts to complete the same up to the point of their incorporation in the Infraco Works;
- 3 the Materials and Parts have been set apart from any third party property and stored at the Siemens warehouse situate at Unit 9B, Simpson Road, Broxburn, EH52 5NP (the "Premises") and have been clearly and visibly marked, so far as practicable, in order to identify such Materials and Parts as belonging to CEC and have been identified for use in the Infraco Works.
- 4 property in the Materials and Parts (including but not limited to supplies received by us from a third party for incorporation in the Materials and Parts) is vested absolutely in us and the Materials and Parts are free from all Security Interests, encumbrances, charges or third party rights of any kind and we are able to pass title to CEC in the Materials and Parts absolutely;
- 5 the Materials and Parts are in every respect in accordance with the requirements of the Infraco Contract;
- 6 the Materials and Parts shall at all times after the date of this Certificate be insured by tie by way of the OCIP Insurances taken out and maintained in full force and effect by tie for the required term;
- 7 the Materials and Parts can be inspected at the Premises at any time upon reasonable notice by tie and/or tie's Representative or by its duly authorised agents; and
- 8 we shall not, except for use on the Infraco Works, remove or cause or permit the Materials or Parts to be moved or removed from the Premises.

We declare that property in the Materials and Parts shall unconditionally vest in CEC in accordance with Clause 9 of the Infraco Contract upon receipt of the interim payment referred to above.



EDINBURGH TRAM NETWORK-INFRAACO CONTRACT

Nothing contained in this Certificate or the Infraco Contract or any payment that may be made to us in respect of the Materials or Parts shall be taken as any approval by tie and/or tie's Representative that the Materials or Parts are in accordance with the Infraco Contract.

We shall Indemnify and save harmless tie from all costs, claims, demands, losses and expenses of whatsoever nature arising from any loss or damage to the Materials or Parts howsoever arising and any breach or non-observance of any of the terms contained in this Certificate save to the extent that such loss or damage is insured by tie in the matter described herein.

Executed for and on behalf of tie Limited

Dated .....

Signed by .....

We Siemens plc of Faraday House, Sir William Siemens Square, Frimley, Camberley, GU16 8QD, England engaged under a contract ("Infraco Contract") dated 08 May 2008 by tie Limited for and on behalf as an operating company of City of Edinburgh Council warrant that the statements made in provisions 1 to 8 above are true and correct and that all the actions referred to have been taken.

Executed for and on behalf of Siemens PLC

Authorised Signatory .....

Full Name .....

Dated .....

Authorised Signatory .....

Full Name .....

Dated .....



**SCHEDULE 1**

**SCHEDULE OF MATERIALS AND PARTS**

The Material and Parts are detailed herein in sheet reference  
ETN(SPM)TIEIPAB\$CF+GABD#054022- entitled 'TPS material values'.