

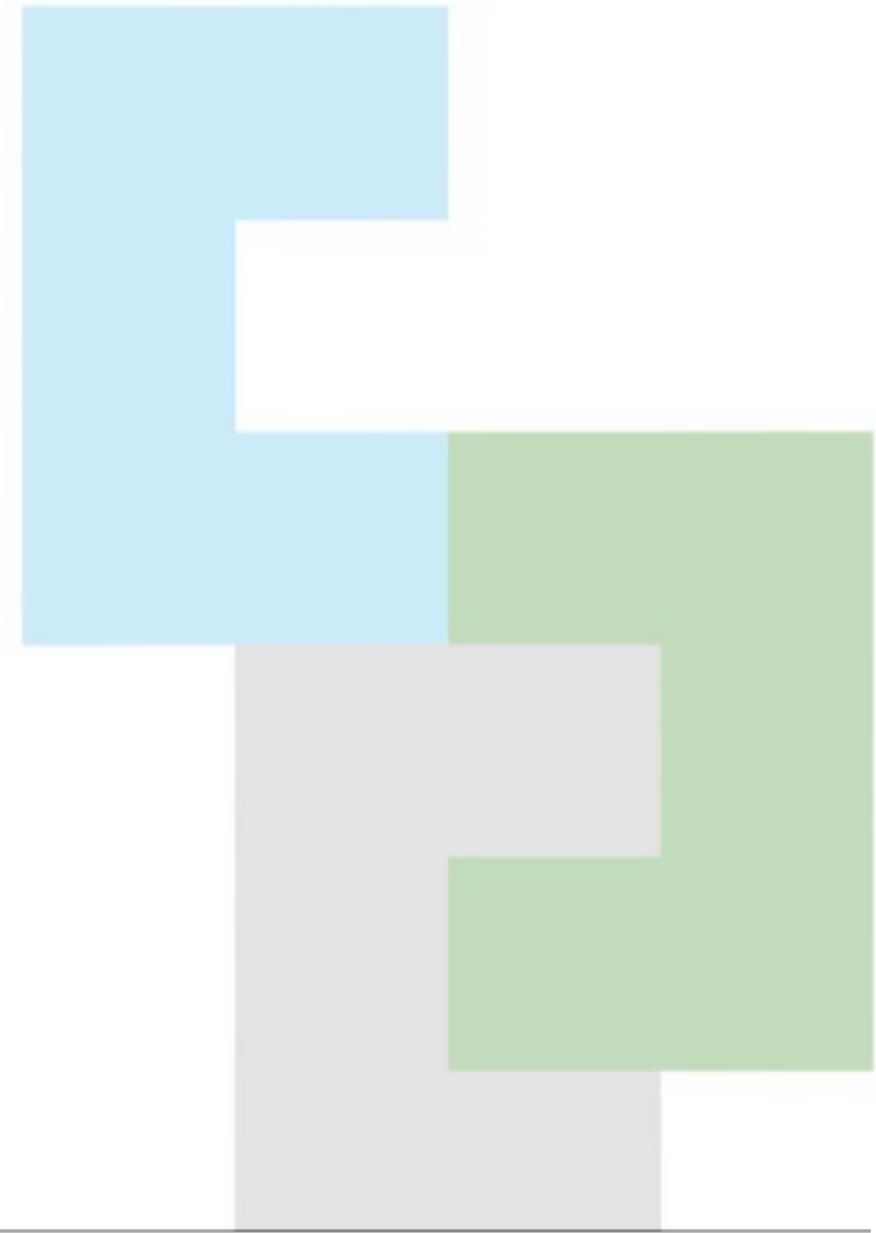
The CITT

Delivering a step change in carbon management infrastructure

Damien Canning

Head of Technical Sustainability

Costain Group PLC



The CITT Team



SKANSKA



Supported by a research grant from the
Construction Climate Challenge

Remit

To develop an automated, integrated, open source tool for quantifying and managing carbon through construction supply chains.

Carry out a range of research relating to **burden shifting, barriers, incentive mechanisms, decision making under uncertainty.**

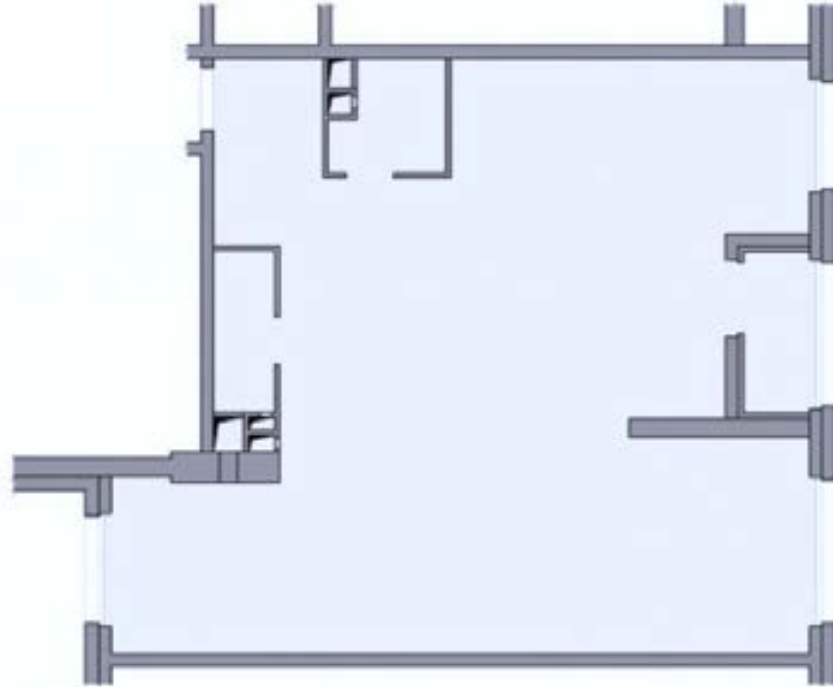


The Green Construction Board

VOLVO

Carbon management – Traditional solution

- Early stage
- Design led
- Top down
- Asset level



Carbon management – CITT solution

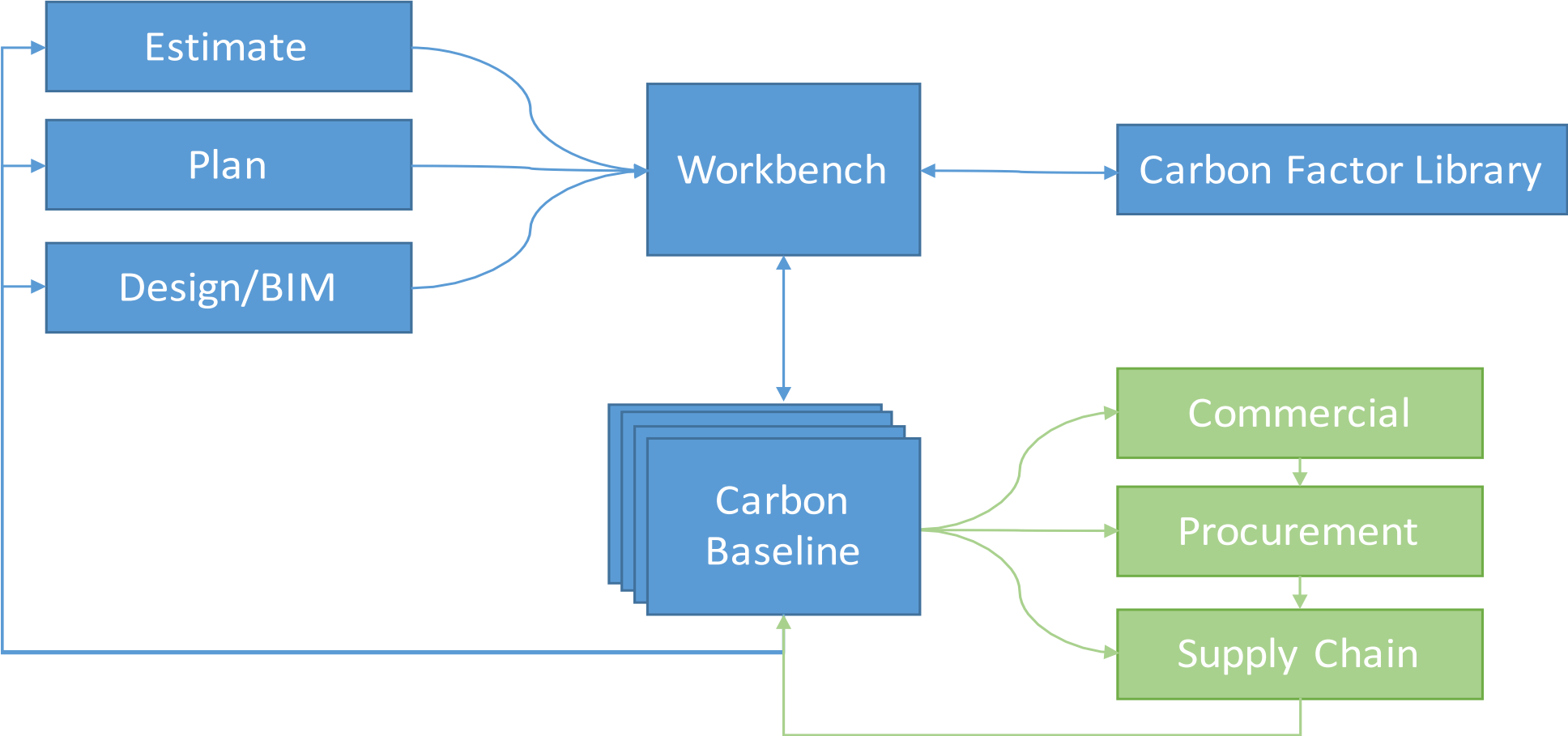
- Later stage
- Contractor led
- Bottom up
- Resource level



Pros

- Granular detail
- Integrated into core processes (cost, time)
- Automatic
- Increased certainty
- Active management

CITT - Schematic





UNIVERSITY OF EDINBURGH
Business School



SKANSKA

Construction Climate challenge 2016

Carbon Calculator

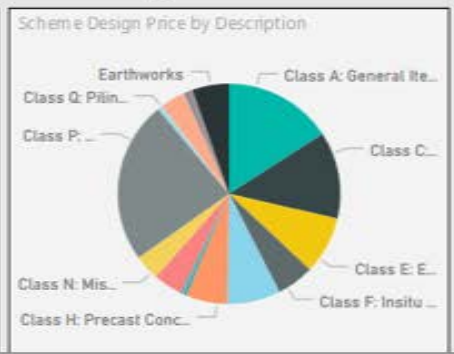
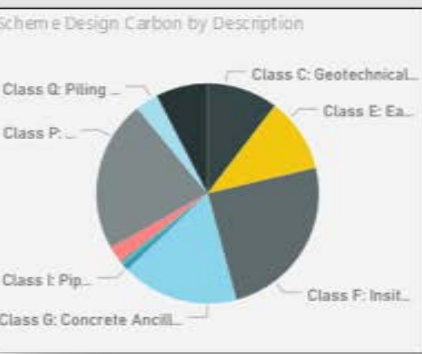
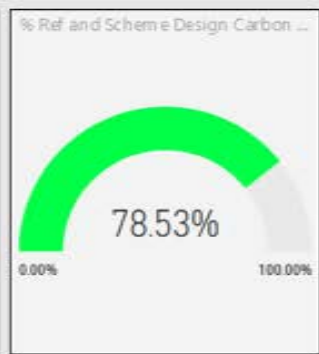
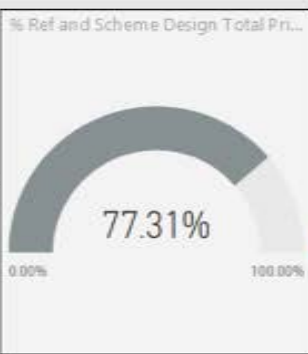
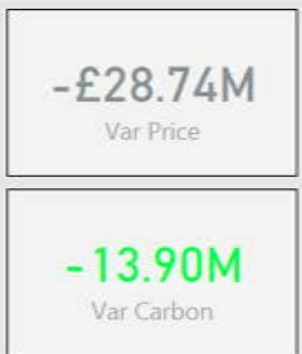
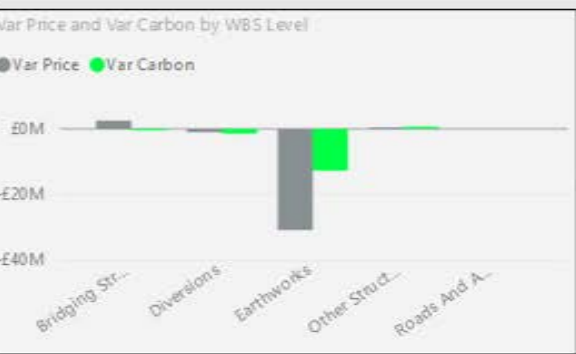


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@enablemyteam

WBS Level	Var Qty	Var Carbon	Var Price	% Carbon Reduction	Total Ref Design Price	Total Scheme Design Price
Bridging Structures	-9.00	-414,724.98	£7,546,448.31	-3.01 %	£23,354,609.81	£25,944,078.14
Diversions	-1.00	-1,423,477.62	£989,820.49	-27.06 %	£12,172,557.35	£11,182,736.86
Earthworks	1.00	12,698,485.00	£30,794,954.94	-28.79 %	£87,674,987.41	£56,880,032.47
Other Structures	0.00	617,318.73	£452,572.66	10.83 %	£1,934,948.19	£2,387,520.85
Roads And Access	0.00	0.00	£0.00		£1,557,510.98	£1,557,510.98
Total	-9.00	-13,899,371.47	-£28,742,734.45	-21.47 %	£126,694,613.75	£97,951,879.29

Level
<input type="checkbox"/> (Blank)
<input type="checkbox"/> 3
<input type="checkbox"/> 4
<input checked="" type="checkbox"/> 5
<input type="checkbox"/> 6
<input type="checkbox"/> 7
<input type="checkbox"/> 8

Description
<input type="checkbox"/> Class A: General Items
<input type="checkbox"/> Class C: Geotechnical And Other Spe...
<input type="checkbox"/> Class D: Demolition And Site Clean...
<input type="checkbox"/> Class E: Earthworks
<input type="checkbox"/> Class F: Insitu Concrete
<input type="checkbox"/> Class G: Concrete Ancillaries
<input type="checkbox"/> Class H: Precast Concrete
<input type="checkbox"/> Class I: Pipeworks - Pipes
<input type="checkbox"/> Class J: Pipework - Pipes
<input type="checkbox"/> Class K: Pipework - Fittings And Valves
<input type="checkbox"/> Class L: Pipework - Manholes And Pi...
<input type="checkbox"/> Class M: Pipework - Supports And Pr...
<input type="checkbox"/> Class N: Structural Metalwork
<input type="checkbox"/> Class O: Miscellaneous Metalwork
<input type="checkbox"/> Class P: Piles
<input type="checkbox"/> Class Q: Piling Ancillaries
<input type="checkbox"/> Class R: Roads And Pavings
<input type="checkbox"/> Class V: Painting
<input type="checkbox"/> Class W: Waterproofing
<input type="checkbox"/> Class X: Miscellaneous Work

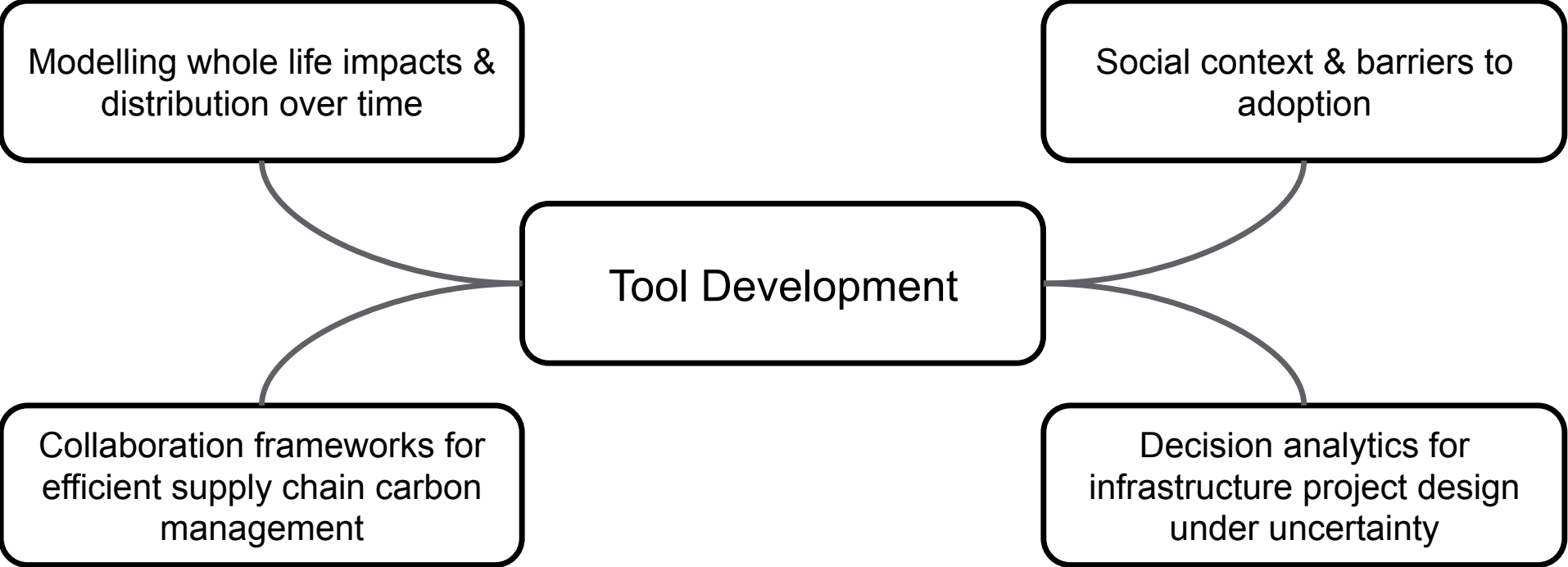


Ref Design Carbon and Scheme Design Carbon by Description:
Class A: General Items
Class C: Geotechnical And Other Specialist Processes
Class D: Demolition And Site Clearance
Class E: Earthworks
Class F: Insitu Concrete
Class G: Concrete Ancillaries
Class H: Precast Concrete

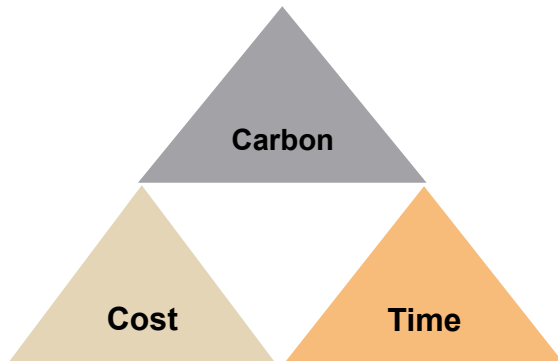
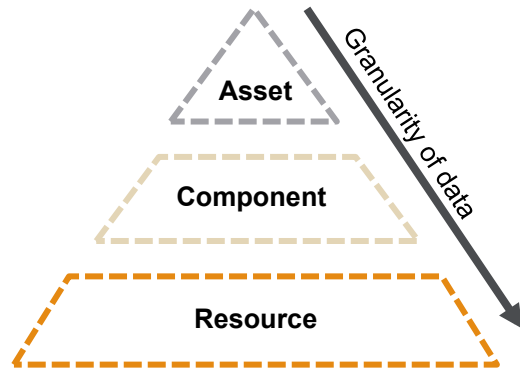


- 30,000+ lines of data
- Dynamic
- Interactive
- Integrated
- Simple to use
- Clear
- Precise

Construction Climate Challenge – Work Packages



Concluding remarks



Shifting from Asset to Resource level assessment

Integration of carbon, cost & time data

Allows for active **management** & reporting

By anyone, anywhere

Delivering a step change in carbon management

Get involved

damien.canning@costain.com

VOLVO