Government Commercial Function

SCM CASE STUDY

Should Cost Modelling
Case Study – Illustrative Model Specification

MAY 2021

Version 1.00

Foreword

This example Should Cost Model (SCM) Specification has been prepared by the Cabinet Office Sourcing Programme. It is based on a fictitious case study, namely the 'CASE Contact Centre', and has been prepared as an illustrative example of a model Specification.

It is one of three case study publications which illustrate some[1] of the key documentation that would typically be produced over the SCM development lifecycle and is intended to highlight good practice principles. The documents produced for this case study are:

- An illustrative Model Scope
- An illustrative Model Specification (this document)
- An illustrative SCM

The case study publications are intended to provide a worked example illustration of good practice model planning and model build techniques and are intended for use by those involved in the production of SCMs.

The case study publications are based on SCM Tools and Templates produced by the Sourcing Programme. The underlying Sourcing Programme SCM Tools & Templates use GCF branding and include guidance on how to use and adapt them. The branding of the underlying SCM Tools & Templates in this case study have been updated to reflect that of the fictitious 'CASE' department.

This illustrative Model Specification is an illustrative example of a **pre-build** model Specification that is developed to, for example, support stakeholder agreement and model development. Over the course of model development, it would typically be updated and used to form the basis of the final model Specification.

For the purposes of this illustrative case study all inputs and outputs from the model are exclusive of VAT. Notably, whilst the Green Book excludes irrecoverable VAT from the economic case of a Business Case (it is classed as a transfer payment) the calculation of irrecoverable VAT would be required for the financial case of a Business Case owing to its impact on affordability.

Additionally, for simplification purposes, this case study does not include the calculation of Optimism Bias within the SCM, although in practice the inclusion of Optimism Bias should be considered (either, within an SCM or calculated separately).

[1] For further details of other documentation typically produced during the model development lifecycle (e.g. Book of Assumptions / Data Log, User Guide etc.) see SCM Development Guidance

It should be noted that, SCM inputs are typically reflective of defined contractual performance standards. For simplicity, in this illustrative case study, performance standards have not been separately defined. In practice, however, inputs should be considered for their alignment with the defined performance standards.

It is good practice to include a record and audit trail of input data denoting the source / ownership of input data. This is typically in the form of a Book of Assumptions / Data Log, which is not included in this illustrative case study.

All case study documents are for illustrative purposes. They are not templates and should not be adapted for real life use.

More general guidance to support the development of SCMs has also been produced by the Sourcing Programme:

- SCM Guidance Note – outlines what SCMs are, when and why contracting authorities should produce them, and key considerations around developing and/or procuring them;

- SCM Development Guidance – provides contracting authorities with guidance on using internal resources to design, develop, test and manage SCMs; and

- SCM Technical Build Guidance – guidance, based on good practice principles for building SCMs. It is technical in nature and aimed at people who will be building SCMs.

It is recommended that the above guidance, and particularly the SCM Development Guidance, is read before commencing development of an SCM Specification. Practitioners should also consult existing good practice guidance including HM Treasury's Macpherson report, Aqua Book and Green Book.

You should consult the Cabinet Office Sourcing Programme for further information or before planning an SCM for complex services, projects or programmes via sourcing.programme@cabinetoffice.gov.uk.

The following sections of this document present the illustrative example model Specification for the fictitious case study.

CONTACT CENTRE SCM

Should Cost Model Specification

28 April 2021
Version 1.1

Document Control

This document sets out the model Specification for the Should Cost Model (SCM) to support the delivery model assessment (DMA) for the CASE Contact Centre.

Document Name:	Contact Centre SCM Specification
Document Status:	Final (pre-model build)
Document Owner:	Yulanda Jenkins (Commercial)
Contact Details:	Yulanda.Jenkins@case.gov.uk

Version	Date	Author	Change Description	Document Review		Document Approval	
				Who	When	Who	When
1.0	28/Apr/21	Sydney Jones	Format of model outputs updated to reflect output of meeting between Parker Thompson and Falcon Wong (27/Apr/21).	Yulanda Jenkins (Commercial) Parker Thompson (Model Architect)	29/Apr/21	Joe Snow	29/Apr/21
0.2	15/Apr/21	Sydney Jones	Updates to reflect stakeholder feedback	Parker Thompson (Model Architect)	17/Apr/21	N/A	N/A
0.1	07/Apr/21	Sydney Jones	Document Creation	Parker Thompson (Model Architect)	09/Apr/21	N/A	N/A

Contents

Document Control 1

Scope 3

Key Personnel 6

Model Functionality 8

Model Structure 10

Outputs 12

Cost Lines, Calculation Logic and Other Inputs 13

Scope

Background

The Sourcing and Construction Playbooks set the requirement to produce a Should Cost Model (SCM) when making sourcing decisions and contracting outside suppliers for the delivery of public services and public works projects or programmes.

The Contracting Authority for SCM Examples (CASE) was established on 01Jan21 to help contracting authorities to implement this policy requirement.

The newly appointed Permanent Secretary of CASE, Pat Smith, agreed a range of measures as part of the implementation support package, including establishing a Contact Centre within ~2 years.

Document Purpose

The purpose of this document is to outline the model Specification (inc. Design) and confirm the key drivers and assumptions for an SCM to support the delivery model assessment (DMA), ahead of Outline Business Case (OBC).

Model Objectives

The primary objective of the SCM is to provide indicative whole life cost estimates for three contact centre delivery options under consideration in the DMA:

1) **Build & Operate** – Build a new, purpose-built, contact centre facility and operate with in-house resources;

2) **Lease & Operate** – Lease and fit-out a suitable facility and operate the contact centre with in-house resources; and

3) **Outsource** – Outsource the contact centre to a third-party provider.

The SCM needs to show costs over time. It will need to be able to evaluate costs under a number of different Planned Annual Call Volumes.

As cost is only one of a number of factors being considered in the DMA it is considered that Rough Order of Magnitude (ROM) costs will be acceptable.

The secondary objective of the SCM is to inform potential budget requirements ahead of spending review. Any outputs from the model that are supplied for these purposes will need to highlight the model's limitations and out of scope areas, articulate risk and uncertainty, and present a range of potential values.

General Model Details

Model Classification:	No protective marking is required [for the purposes of this case study]
Business Critical Model:	No
Dependencies:	The DMA is dependent on the output from the SCM The SCM is dependent on volume assumptions from the service design workstream
IMA Score:	Medium

Model Limitations

The following costs are out of scope and are not included within the SCM:

- Costs associated with contract management (inc. monitoring and evaluation)
- Costs associated with recruitment (considered to be relatively low)
- Land acquisition costs (sunk, with negligible opportunity value)
- Benefits (e.g. from reduced 3rd party consulting spend)
- VAT (all model input and output values are exclusive of VAT)
- Irrecoverable VAT is not included [for the purposes of this case study]
- Optimism Bias is not included [for the purposes of this case study]

Key limitations of the SCM include:

- Outputs are at the Rough Order of Magnitude level
- Schedule risk, particularly with regards to Option 1, is not included
- The model will not be suitable to inform detailed staff rostering
- Staff numbers are modelled on a Full Time Equivalent (FTE) basis and are not rounded to the nearest whole integer
- The model is designed to evaluate three specific options only (Build & Operate / Lease & Operate / Outsource)
- The model excludes VAT and is not suitable to support the financial case of a Business Case

Other Key points:

- A simplifying assumption is that asset life is aligned to the 30 year operating period (plus one year mobilisation period) and has no residual value at the end of this period.
- Contracts associated with the delivery options (e.g. Facilities Management) would likely be less than 30 years, however, for simplicity they are modelled over this period to enable comparison and assumed to be extended (e.g. three 10 year contracts).
- Model limitations and out of scope areas need to be made explicit when sharing outputs from the SCM.

Key Personnel

Stakeholders

Key model stakeholders and decision makers (taking ownership for the assumptions used and responsible for the model) are:

- Joe Snow: Model SRO (Sign-off model documentation and model use)
- Yulanda Jenkins: Model Customer (Reviewer of SCM Scope & Specification)
- Falcon Wong: Model Customer (Support SCM User Acceptance Testing)
- Sydney Jones: Model Developer (Build SCM and draft the documentation)
- Parker Thompson: Model Architect (Design SCM and oversee development)
- Ani Versailles: Quality Assurer (Verification and QA Plan reviewer)
- Alex Vader: Quality Assurer (Validation and QA Plan reviewer)

Model Operator

- Falcon Wong: Model Operator

Data Management

Data collation and management will be undertaken by:

- Dylan Oban: Data Management

The data providers and data owners are:

- Falcon Wong: Finance Data (SME)
- Yulanda Jenkins: Commercial Data (SME)
- Oakley Katz: Operations Data (SME)

All Finance data will be reviewed by Falcon Wong prior to inclusion within the model who, together with Yulanda Jenkins (Commercial) and Oakley Katz (Operations) will review the Book of Assumptions / Data Log prior to formal QA and testing. Any proposed data changes following formal QA and testing will need to be approved by Joe Snow ahead of implementation.

Model Functionality

Model Timeline

The model timeline is based on a financial year from 1 April to 31 March.

The model covers a one-year design and build / mobilisation period, from 01 April 2022 to 31 March 2023, followed by a thirty-year operating period, from 1 April 2023 to 31 March 2053 (thirty-one years in total).

Note that the Build & Operate option includes infrastructure that would typically be evaluated over a 60-year period as part of the business case process. However, for the purposes of the DMA, a 30-year period has been chosen in order to strike a balance between asset life and the likely shorter length of contracts for some service components (e.g. Facilities Management, Training, IT Maintenance).

Periodicity

The model is calculated on an annual basis and includes 5-yearly summaries of operating costs (plus a one-year summary of design and build / mobilisation costs).

Scenarios & Sensitivities

In addition to the three delivery options (Build & Operate / Lease & Operate / Outsource), the model includes the following scenario functionality:

- Planned Maximum Annual Call Volume Capacity: Scenario A / Scenario B / Scenario C

The model includes the following sensitivity functionality:

- Call Volume: X% Reduction vs Planned Maximum Call Volume Capacity

Risk & Uncertainty

The model takes the following approach to Risk & Uncertainty:

Low Case / Base Case / High Case (LC/BC/HC) scenarios are used for key cost drivers (see Tables below in ‘Cost Lines, Calculation Logic and Other Inputs’ section).

Optimism Bias

Optimism Bias (OB) will be calculated outside of the SCM.

Model Currencies

All modelling will be undertaken in £GBP.

Inflation

All costs to be entered in the model in £2022/23 economic conditions/price base.

Where applicable (see Tables below in 'Cost Lines, Calculation Logic and Other Inputs' section), inflation rates are selected from a drop-down list, to include up to 5 different Annual Percentage Rates (APRs).

Inflation will be calculated on an annual basis and applied at the end of each period. There will be no inflation in the first year of the model.

Each cost line will also be calculated in real terms by discounting nominal values using the GDP Deflator (user input).

Taxation

VAT is out of scope. All costs are entered into the model exclusive of VAT and all outputs are exclusive of VAT. Irrecoverable VAT is not included within the model.

Model Structure

Software requirements

The model is built in Microsoft Excel O365 ProPlus and saved in the XLSX file format.

Sign convention

The model adopts the following signage conventions:

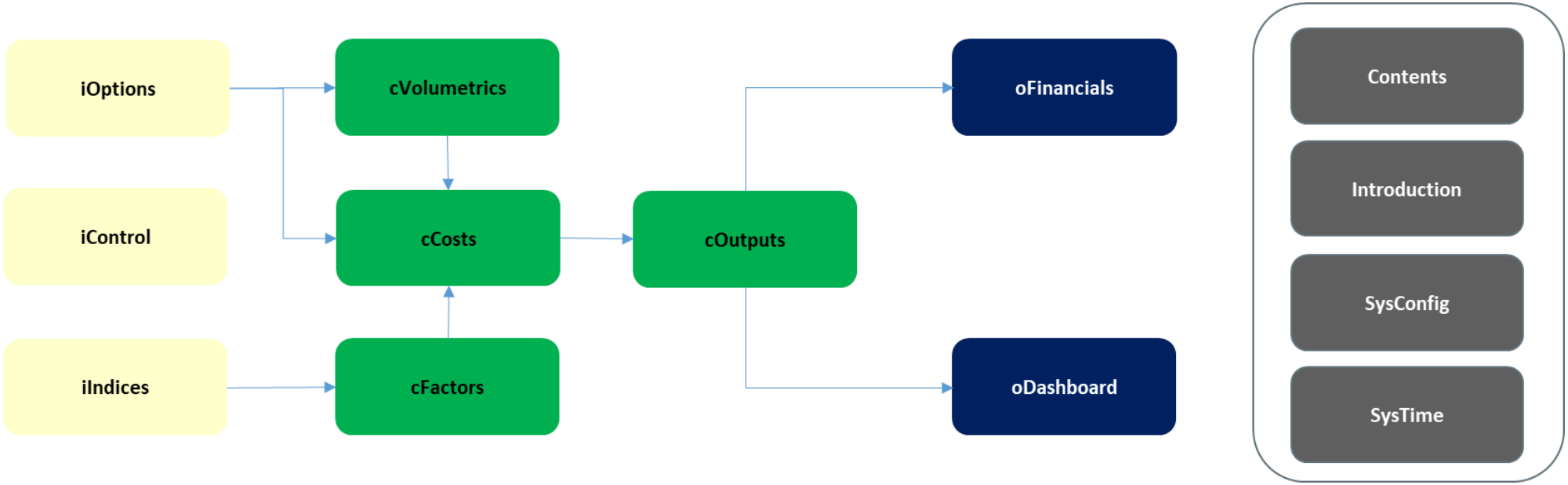
- Costs are shown as positive values (+)

Error control

The model includes an in-built error check network with summary worksheet and workbook level checks. Master error checks are included on the contents page and at the top of each worksheet within the model.

Model Map / Design

The diagram below depicts the model design and structure. It shows the key sheets, together with a brief description of sheet content, and shows the general flow of data from inputs through calculations to outputs. Input sheets are shown in yellow, calculation sheets in green, output sheets in blue, and governance sheets in grey.



The SysConfig sheet will include general model set up information such as Project Name, Developer Name and model lists.

The SysTime sheet will include the model timeline and timing flags.

Outputs

The model includes the following key Outputs worksheets:

- **oFinancials**
- **oDashboard**

The oFinancials sheet will include the following:

- In-year costs including inflation over time for the three delivery options
- Cumulative costs including inflation over time for the three delivery options
- Average cost per call hour including inflation (31 year average) – calculated as total cost of option / total call volume
- Real in-year costs over time for the three delivery options
- Real cumulative costs over time for the three delivery options
- Real average cost per call hour (31 year average) – calculated as total cost of option / total call volume
- NPV (in £2022/23 economic conditions) for the three delivery options (discounted at the treasury discount rate)

The oDashboard sheet will include the following:

- Bar Chart showing NPV for the three delivery options
- Nominal Cost for the three delivery options
- Line Chart showing costs (inc. inflation) over time for the three delivery options

Example Output templates can be found in Z:\\2021\Contact-Centre\Procurement\SCM\PlanningDocuments

Cost Lines, Calculation Logic and Other Inputs

This section identifies the key components that are modelled and the main drivers of these components.

Table 1: Call Volumes (All Options)

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
1.1	Call Volumes	Annual Call Volumes	Planned Maximum Annual Call Volume Capacity (A) x (1 - Annual Call Volume Reduction % (B))	Planned Maximum Annual Call Volume (A) Annual Call Volume Reduction % (B)	N/A	3 input fields for Planned Maximum Annual Call Volume (Scenarios A/B/C) Assumed to be flat over time

Table 2: Operating Costs (Outsource Option)

Note: staff operating costs are assumed to be incurred from the first year of operation (2023/24 onwards).

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
2.1	Operating Costs	Annual Operating Costs	Cost per Call Hour (A) x Call Volumes (Item 1.1)	Cost per Call Hour (A)	APR	3 input fields for Cost per Call Hour (LC/BC/HC)

Table 3: Staff Numbers (Lease & Operate and Build & Operate Options)

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
3.1	Staff Numbers	Active Number of Agents	Call Volumes (Item 1.1) / Agent Annualised Hours (A)	Agent Annualised Hours (A)	N/A	See Table 1 for Annual Call Volumes
3.2	Staff Numbers	Number of Agents	Active Number of Agents (Item 3.1) / Agent Productivity Rate (A)	Agent Productivity Rate (A)	N/A	3 input fields for Agent Productivity Rate (LC/BC/HC)
3.3	Staff Numbers	Active Number of Supervisors	Active Number of Agents (Item 3.1) / Agent to Supervisor Ratio (A)	Agent to Supervisor Ratio (A)	N/A	3 input fields for Agent to Supervisor Ratio (LC/BC/HC)
3.4	Staff Numbers	Number of Supervisors	Number of Agents (Item 3.2) / Agent to Supervisor Ratio (A)	Agent to Supervisor Ratio (A)	N/A	
3.5	Staff Numbers	Number of Admin & Support Staff	Sum (Number of Admin & Support Staff by Role)	Number of Admin and Support Staff by Role	N/A	Admin & Support Staff Roles include: 1) Reception & Admin Support; 2) IT Support; 3) Office Manager; and 4) Office Deputy.
3.6	Staff Numbers	Office Capacity	Active Number of Agents + Active Number of Supervisors + Number of Admin & Support Staff (Item 3.1 + Item 3.3 +Item 3.5)	N/A	N/A	

Table 4: Staff Costs (Lease & Operate and Build & Operate Options)

Note: staff costs are assumed to be incurred from the first year of operation (2023/24 onwards).

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
4.1	Staff Costs	Agent Costs	Number of Agents (Item 3.2) x Fully Loaded Annual Staff Costs per Agent (A)	Fully Loaded Annual Staff Costs per Agent (A)	APR	3 input fields for Fully Loaded Annual Staff Costs per Agent (LC/BC/HC)
4.2	Staff Costs	Supervisor Costs	Number of Supervisors (Item 3.4) x Fully Loaded Annual Staff Costs per Supervisor (A)	Fully Loaded Annual Staff Costs per Supervisor (A)	APR	3 input fields for Fully Loaded Annual Staff Costs per Supervisor (LC/BC/HC)
4.3	Staff Costs	Admin & Support Staff Costs	Number of Admin & Support Staff by Role (A) x Fully Loaded Annual Staff Costs by Role (B)	Number of Admin and Support Staff by Role (A) Fully Loaded Annual Staff Costs by Role (B)	APR	Admin & Support Staff Roles include: 1) Reception & Admin Support; 2) IT Support; 3) Office Manager; and 4) Office Deputy. 3 input fields for Fully Loaded Annual Staff Costs by Role (LC/BC/HC)

Table 5: Software & Hardware Costs (Lease & Operate and Build & Operate Options)

Note: costs are assumed to be incurred from the first year of operation (2023/24 onwards).

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
5.1	Telephony Software	Application Cost	N/A	Application Cost (A)	N/A	One-off cost (Y2) 3 input fields for Application Cost (LC/BC/HC)
5.2	Telephony Software	Vendor Support & Maintenance	Application Cost (Item 5.1) x Vendor Support & Maintenance % (A)	Vendor Support & Maintenance % (A)	APR	3 input fields for Cost per Vendor Support & Maintenance % (LC/BC/HC)

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
5.3	Telephony Software	License Costs	Cost per Licence (A) x Active Number of Agents (Item 3.1)	Cost per Licence (A)	APR	3 input fields for Cost per License Cost (LC/BC/HC)
5.4	Telephony Hardware	Hardware Costs	Initial Hardware Costs (A) x Replacement Factor (B)	Initial Hardware Costs (A) Replacement Factor (B)	N/A	Replacement Factor 100% in Y2 then 5 Yearly at reduced % (user input) 3 input fields for Hardware Costs (LC/BC/HC)
5.5	Telephony Software & Hardware	Implementation Costs	Initial Implementation Costs (A) x Replacement Factor (B))	Initial Implementation Costs (A) Replacement Factor (B)	APR	Replacement Factor 100% in Y2 then 5 Yearly at reduced % (user input) 3 input fields for Implementation Costs (LC/BC/HC)
5.6	Training	Training Costs	Fixed Training Cost (A) x Periodic Factor (B) + Annual Training Cost per User (C) x (Number of Agents (Item 3.2) + Number of Supervisors (Item 3.4))	Fixed Training Cost (A) Periodic Factor (B) Annual Training Cost per User (C)	APR (for Annual Training Cost)	Fixed Training Costs (Periodic Factor 100% in Y2 then 5 Yearly at reduced % (user input) Annual Training Cost per User Cost 3 input fields for Fixed Training Cost (LC/BC/HC) 3 input fields for Annual Training Cost per User (LC/BC/HC)
5.7	Hardware	Terminals & Ancillaries	Office Capacity (Item 3.6) x Initial Capital Cost per Terminal (A) x Replacement Factor (B)	Initial Capital Cost per Terminal (A) Replacement Factor (B)	APR	Replacement Factor 100% in Y2 then 3 Yearly at reduced % (user input) 3 input fields for Cost per Terminal (LC/BC/HC)
5.8	Software	General License Costs	Office Capacity (Item 3.6) x Cost per Licence (A)	Cost per Licence (A)	APR	3 input fields for Cost per Licence (LC/BC/HC)

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
5.9	Hardware & Software	IT Infrastructure & Maintenance Costs	Office Capacity (Item 3.6) x IT Infrastructure & Maintenance Costs per User (A)	IT Infrastructure & Maintenance Costs per User (A)	APR	3 input fields for IT Infrastructure & Maintenance Costs per User (LC/BC/HC)

Table 6: Total Lease Costs (Lease & Operate Option)

Note: lease costs are assumed to be incurred from the first year of operation (2023/24 onwards).

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
6.1	Lease Costs	Annual Serviced Office Costs	Office Capacity (Item 3.6) X Lease Cost per FTE (A)	Serviced Office Cost per FTE (A)	APR	

Table 7: Building Size (Build & Operate Option)

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
7.1	Building Size	Floor Area	Office Capacity (Item 3.6) x Staff Space Standard (A)	Staff Space Standard (A)	N/A	3 input fields for Staff Space Standard (LC/BC/HC)

Table 8: Build & Maintenance Costs (Build & Operate Option)

Note: costs associated with design and build are expected to be incurred in the mobilisation year (2022/23).

Item	Category	Description	Forecast Calculation	Input Data Fields	Inflation Treatment	Comments
8.1	Design Costs	Design Costs	Total Build Cost exc. Site Preparation (Item	Design/Build Cost % (A)	N/A	Incurred in Y1

			8.2) x Design/Build Cost % (A)			3 input fields Design/Build Cost % (LC/BC/HC)
8.2	Build Costs	Build Costs	Cost per m2 per Build Cost Category (A) x Floor Area (Item 7.1)	Cost per m2 per Build Cost Category (A)	N/A	Incurred in Y1 Up to 25 Build Cost Categories (e.g. substructure, fittings) 3 input fields for Cost per m2 per Build Cost Category (LC/BC/HC)
8.3	Build Costs	Site Preparation Costs	Site Preparation Costs (A)	Site Preparation Costs (A)	N/A	Incurred in Y1 3 input fields for Site Preparation Costs (LC/BC/HC)
8.4	FM Costs	FM Costs	Cost per m2 per FM Cost Category (A) x Floor Area (Item 7.1)	Cost per m2 per FM Cost Category (A)	APR	Up to 5 FM Cost Categories (e.g. repair & maintenance, utilities, cleaning) 3 input fields for Cost per m2 per FM Cost Category (LC/BC/HC) Assumed to be incurred from the first year of operation (2023/24 onwards)

Other Inputs

Item	Category	Description	Comments
1	Inflation	Annual Inflation Rates	Maximum of 5 different APRs (e.g. wage inflation, Other Inflation)
2	Deflators	GDP Deflator	For stripping out the impact of general price inflation
3	Discount Rate	Treasury Discount Rate	Real discount rate used to calculate NPV (exc. Irrecoverable VAT)
4	Controls	Scenario Controls	Two scenario controls are required to switch between: 1) Planned Maximum Call Volume Scenarios (A/B/C); and 2) Different cost scenarios (Low Case / Base Case / High Case).

Example Input templates can be found in Z:\\2021\Contact-Centre\Procurement\SCM\PlanningDocuments