



CONSTRUCTION INDUSTRY IMPLEMENTATION MANUAL

SOLVER, INC.

Table of Contents

Construction Industry Overview	2
Purpose of this Document	2
Time Investment	2
Solver Construction Model – Implementation Steps	2
Preparations BEFORE Implementation	2
Data Integration.....	3
Structure for GL Dimensions.....	3
Structure for GL and GL Detail.....	4
Structure for Project Module.....	4
Integration for GL Dimensions	5
Integration for Project Module.....	8
Solver Expressions and KPI Configuration	8
Expression Setup.....	8
KPI Setup	10
Construction Report Template Setup and Modifications.....	13

Construction Industry Overview

Purpose of this Document

This document is a step-by-step guide for the implementation of the **Construction Industry** model. In it you will find:

- Solver modules and dimensions set up.
- Integration of the main Statistical Accounts used by Solver's report and form templates for Senior Living.
- Solver expressions and KPIs set up.
- Solver Senior Living Template set up.
- Examples for ERP mapping.

Time Investment

These hours are for **first-time implementation** of Solver industry model assets and it assumes significant re-use (and minimal customizations) of the available Solver report and form templates. It does not include time spent on NEW report/form templates or new integrations.

- Solver consultant investment estimate: 60-90 hours
- Customer time investment estimate: 10-15 hours

Implementation Note

- QuickStart (or QuickStart Compatible) is the assumed base integration for the implementation before any industry specific scripts/configuration is done. This may change in the future and this document will be updated accordingly.
- ERPs are assumed to be one of the following: Dynamics 365 Business Central, Sage Intacct or Acumatica. *It is possible to also map other ERPs to this Solver industry model if you follow the exact same steps provided. If in doubt, contact Solver to discuss.*

Solver Construction Model – Implementation Steps

Preparations BEFORE Implementation

1. Book kickoff meeting with client
 - a. Review of this document and related Construction implementation documents (found in the Solver Partner Portal)
 - b. Define SCOPE of model to be implemented:
 - i. Review SAMPLE reports in the Construction demo tenant and agree with the client on a scope based on the template examples.
 - ii. Review list of KPIs definitions for the KPIs used in the scope defined and agree with the client on the way we'd calculate the KPIs.

2. Assets to prepare before the model/template implementation starts.

Asset	Responsible	
	Consultant	Customer
Solver Industry Tenant -Blank QuickStart tenant	X	
QuickStart Pre-Requisites (based on ERP)		X
Data Source Definitions Sheet *	X	Provide Input
Account Category Mapping Sheet (for use in QS Wizard) *	X	Provide Input
KPI Definitions Sheet *	X	Provide Input
Industry Template Examples sheet *	X	Provide Input
Teams Chat and Site to Share Documents with Customer	X	

**) Located in the "Implementation Prep – Construction.xls" document*

3. Run QuickStart for GL with the customer.
4. Be sure to select all applicable ERP standard dimensions when running QuickStart and map them to the appropriate Solver standard dimension.
 - 4.1. For construction, the following dimensions will be required.
 - 4.1.1. Project
 - 4.1.2. Task
 - 4.2. Each has a standard dimension that has been added to the Solver Datawarehouse
5. Once QuickStart has been completed, the GL Dimensions and GL Data will have loaded.
6. Next step is to establish the structure for the Project Module. More detail is located below, but here are the summary steps:
 - 6.1. Edit the Project and Task dimensions
 - 6.2. Create the Project Module
 - 6.3. Assign the dimensions per the notes below
 - 6.4. Add the attributes to the Module
 - 6.5. Create the integration
7. Mapping tips are provided below for known ERPs.

Data Integration

Structure for GL Dimensions

QuickStart will create most of the GL dimension structure for you. Please be sure you have also included:

- i. Project
- ii. Task

You will need to edit the Project and Task dimensions to include additional attributes. The modifications to each dimension are as follows:

Project	<i>Add the following fields</i>	
System Name	Field Name	Data Type
UDF001	Parent Project	Short Text
UDF002	Project Start Date	Date
UDF003	Project End Date	Date
UDF004	Project Type	Short Text
UDF005	Project Status	Short Text
UDF006	Budget Amount	Amount
UDF007	Actual Amount	Amount
UDF008	% Complete	Amount
UDF009	Project Manager	Amount
UDF010	Comments	Comment

Task	<i>Add the following fields</i>	
System Name	Field Name	Data Type
UDF001	Task Begin Date	Date
UDF002	Task End Date	Date
UDF003	Task Type	Short Text
UDF004	Task Status	Short Text
UDF005	Task Priority	Short Text
UDF006	Task Budget Amt	Amount
UDF007	Task Actual Amt	Amount
UDF008	Task % Complete	Amount
UDF009	Task Assigned Resource	Long Text
UDF010	Actual Hours	Amount
UDF011	Budget Hours	Amount
UDF012	Task Notes	Comment
UDF013	Project Code	Short Text

Structure for GL and GL Detail

There are no changes to the GL and GL detail.

Structure for Project Module

QuickStart will create most of the GL dimension structure for you. However, you will need to create the Project Module via manual integration. When you create the new module, all system fields will be created for you. Rename the value fields as required. No additional attributes will be needed for this module.

Project Module	<i>Edit the following</i>	
System Name	Field Name	Data Type
Value1	Amount	Amount (29,12)
Value2	Hours	Amount (29,12)
Value3	% Complete	Amount (29,12)

You will also need to assign the dimensions to the Project Module. At a minimum, you need to assign

- Category
- Period
- Project
- Scenario
- Task

The Module schema will resemble the structure in this image (depending on customer structure):

Dimension Label	General Ledger	General Ledger Detail	Project
Account	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Category	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Contract	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Currency	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Department	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Employee	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Entity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Item	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Location	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Period	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Project	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scenario	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stargate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Task	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vendor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Warehouse	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Integration for GL Dimensions

QuickStart will create most of the GL dimension integration for you. However, you will need to add the attributes noted above. However, you will need to edit the integration for the 2 dimensions noted above to add the additional attribute information. Any fields noted with **Consultant* are awaiting confirmation from a customer integration prior to being included in this document.

Project Integration – Modification example:

TARGET : Project PREVIEW

Target Field	Mapping Expression	
Code	[PROJECTID]	X
Description	[NAME]	X
Alias		X
Source		X
Active		X
Parent Project	[PARENTID]	X
Project Start Date	[BEGINDATE]	X
Project End Date	[ENDDATE]	X
Project Type	[PROJECTTYPE]	X
Project Status	[STATUS]	X
Budget Amount	[BUDGETAMOUNT]	X
Actual Amount	[ACTUALAMOUNT]	X
% Complete	[PERCENTCOMPLETE]	X
Project Manager	[MANAGERCONTACTNAME]	X
DRAG SOURCE FIELD HERE TO CREATE A NEW TARGET OR CLICK HERE		

Project	Add the following fields				
System Name	Field Name	Data Type	Intacct Source	BC Source	Acumatica Source
UDF001	Parent Project	Short Text	PROJECTID	*Consultant	*Consultant
UDF002	Project Start Date	Date	BEGINDATE	*Consultant	*Consultant
UDF003	Project End Date	Date	ENDDATE	*Consultant	*Consultant
UDF004	Project Type	Short Text	PROJECTTYPE	*Consultant	*Consultant
UDF005	Project Status	Short Text	STATUS	*Consultant	*Consultant
UDF006	Budget Amount	Amount	BUDGETAMOUNT	*Consultant	*Consultant
UDF007	Actual Amount	Amount	ACTUALAMOUNT	*Consultant	*Consultant
UDF008	% Complete	Amount	PERCENTCOMPLETE	*Consultant	*Consultant
UDF009	Project Manager	Amount	MANAGERCONTACTNAME	*Consultant	*Consultant
UDF010	Comments	Comment	*Consultant	*Consultant	*Consultant

Task Integration – Modification example:

TARGET : Task

PREVIEW

Target Field	Mapping Expression	
Source		✕
Task Start Date	[ABEGINDATE]	✕
Task End Date	[AENDDATE]	✕
Task Type		✕
Task Status	[TASKSTATUS]	✕
Task Priority	[PRIORITY]	✕
Task Budget Amount		✕
Task Actual Amount		✕
Task % Observed Complete	[OBSPERCENTCOMPLETE]	✕
Task Assigned Resource		✕
Task Actual Hours	[ACTUALQTY]	✕
Task Budget Hours	[BUDGETQTY]	✕
Task Notes		✕
Project Code	[PROJECTID]	✕
DRAG SOURCE FIELD HERE TO CREATE A NEW TARGET OR CLICK HERE		

Task	Add the following fields				
System Name	Field Name	Data Type	Intacct Source	BC Source	Acumatica Source
UDF001	Task Begin Date	Date	ABEGINDATE	*Consultant	*Consultant
UDF002	Task End Date	Date	AENDDATE	*Consultant	*Consultant
UDF003	Task Type	Short Text	*Consultant	*Consultant	*Consultant
UDF004	Task Status	Short Text	TASKSTATUS	*Consultant	*Consultant
UDF005	Task Priority	Short Text	PRIORITY	*Consultant	*Consultant
UDF006	Task Budget Amt	Amount	*Consultant	*Consultant	*Consultant
UDF007	Task Actual Amt	Amount	*Consultant	*Consultant	*Consultant
UDF008	Task % Complete	Amount	OBSPERCENTCOMPLETE	*Consultant	*Consultant
UDF009	Task Assigned Resource	Long Text	*Consultant	*Consultant	*Consultant
UDF010	Actual Hours	Amount	ACTUALQTY	*Consultant	*Consultant
UDF011	Budget Hours	Amount	BUDGETQTY	*Consultant	*Consultant
UDF012	Task Notes	Comment	*Consultant	*Consultant	*Consultant
UDF013	Project Code	Short Text	PROJECTID	*Consultant	*Consultant

Integration for Project Module

After assigning the appropriate dimensions, the Project Module integration will need to be created manually. In addition to your dimensions, the additional key fields for the integration are noted here.

Project					
System Name	Field Name	Data Type	Intacct Source	BC Source	Acumatica Source
Value1	Amount	Amount (29,12)	ACTUALAMOUNT	*Consultant	*Consultant
Value2	Hours	Amount (29,12)	ACTUALQTY	*Consultant	*Consultant
Value3	% Complete	Amount (29,12)	OBSPERCENTCOMPLETE	*Consultant	*Consultant

Solver Expressions and KPI Configuration

Expression Setup

Since the project data in this industry is contained within the GL, a significant portion of the expressions remain linked to the financial expressions. This is because the analysis is performed using project filters or KPIs configured with financial expressions.

You can configure existing and new industry-specific expressions by following the steps outlined below.

1. Open Report Designer.
2. In the Report Designer Pane, locate Expressions, then, Manage Expressions.
3. Import the Expression files provided in the Construction industry implementation assets
4. Click on *QS_Construction* expression group and then click on Change (see image below).

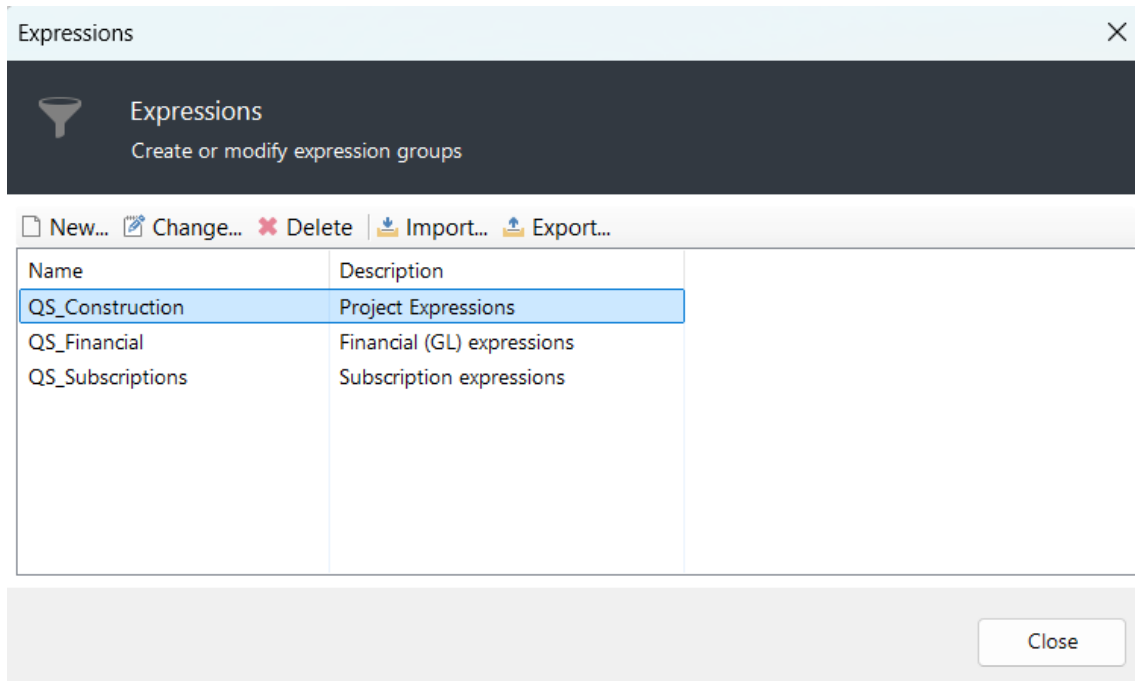


Figure 1. Create or modify Construction Expressions

- Once the Expressions Editor window opens the expressions of the group will show in a list. Select each expression and review the filters that are being applied to match the following:

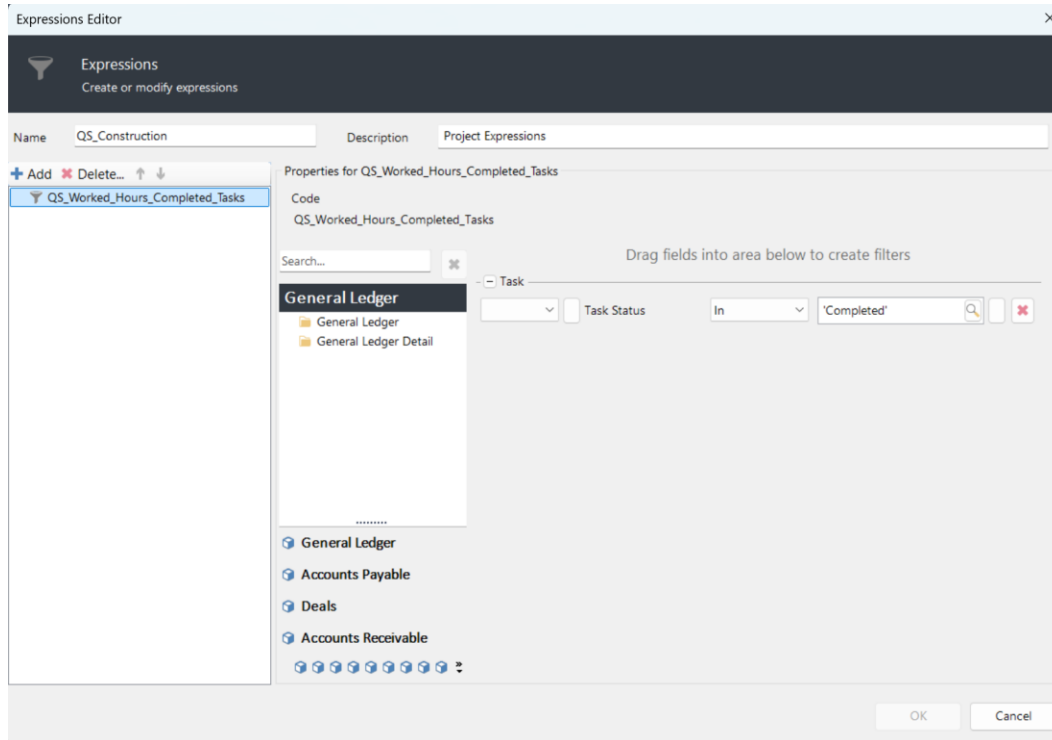


Figure 2. Worked Hours Completed Task

KPI Setup

To review or modify the KPI calculations follow these steps:

1. Review the *KPI Definition* Sheet in the "Implementation Prep – Construction.xls" file provided in Solver's Construction industry implementation assets to understand how each KPI is being calculated and identify possible changes.
2. Open Report Designer.
3. In the Report Designer Pane, locate KPIs, then, Manage KPIs.
4. Import the KPI files provided in Solver's Construction industry implementation assets
5. Click on *QS_Construction* KPI group and then click on Change (see image below).

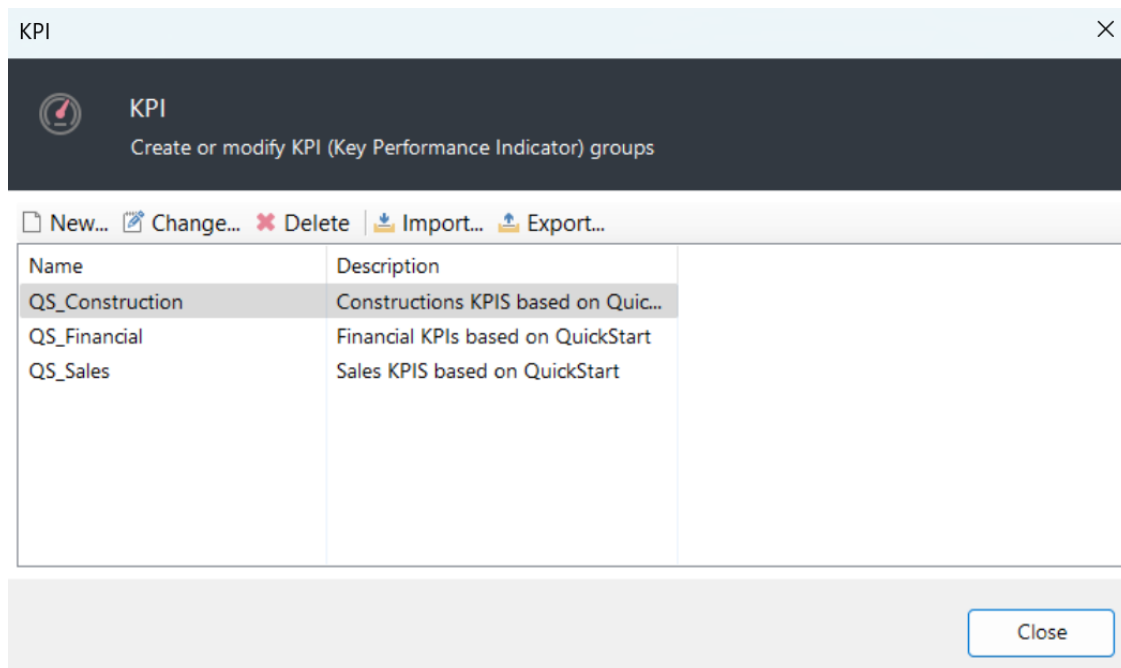


Figure 3. Create or Modify KPI Calculations

6. Once the KPI Editor window opens and the KPIs of the group will show in a list. The formula that's being applied should be written in the comment section of each KPI. Select each KPI and review the formula that is being applied to match the following examples:

KPIs

Create or modify KPIs.

Name: Description:

+ Add - Delete...

- ① QS_Overhead_Cost_as_Revenue_Percentage
- ② QS_Project_Net_Profit
- ③ QS_Project_Overhead_Cost
- ④ QS_Project_Total_Revenue

Properties for QS_Construction.QS_Overhead_Cost_as_Revenue_Percentage


Code: QS_Construction.QS_Overhead_Cost_as_Revenue_Percentage

Name:

Comment:


Formula mode

☒ Based on Expressions

Measure: 

☐ Based on Measures

Formula:

 Edit...

OK Cancel

Figure 4. Overhead Cost as Revenue Percentage Formula

KPIs

Create or modify KPIs.

Name: Description:

+ Add - Delete...

- ① QS_Overhead_Cost_as_Revenue_Percentage
- ② QS_Project_Net_Profit
- ③ QS_Project_Overhead_Cost
- ④ QS_Project_Total_Revenue

Properties for QS_Construction.QS_Project_Net_Profit


Code: QS_Construction.QS_Project_Net_Profit

Name:

Comment:


Formula mode

☒ Based on Expressions

Measure: 

☐ Based on Measures

Formula:

 Edit...

OK Cancel

Figure 5. Net Profit Formula

KPIs

Create or modify KPIs.

Name: Description:

+ Add - Delete...

- QS_Overhead_Cost_as_Revenue_Percentage
- QS_Project_Net_Profit
- QS_Project_Overhead_Cost**
- QS_Project_Total_Revenue

Properties for QS_Construction.QS_Project_Overhead_Cost


Code: QS_Construction.QS_Project_Overhead_Cost

Name:

Comment:


Formula mode:

☒ Based on Expressions

Measure: 

☐ Based on Measures

Formula:

 Edit...

OK Cancel

Figure 6. Overhead Cost Formula

KPIs

Create or modify KPIs.

Name: Description:

+ Add - Delete...

- QS_Overhead_Cost_as_Revenue_Percentage
- QS_Project_Net_Profit
- QS_Project_Overhead_Cost
- QS_Project_Total_Revenue**

Properties for QS_Construction.QS_Project_Revenues


Code: QS_Construction.QS_Project_Revenues

Name:

Comment:


Formula mode:

☒ Based on Expressions

Measure: 

☐ Based on Measures

Formula:

 Edit...

OK Cancel

Figure 7. Project Total Revenue Formula

Construction Report Template Setup and Modifications.

1. Import all- or selected report templates from Solver's industry implementation assets
2. Select each report that needs to be modified and open in Report Designer. Review Each industry report contains a hidden "Config" sheet that can be accessed by opening the report in the Report Designer during report configuration. This sheet allows users to modify and configure the industry reports.

The sheet is structured as follows:

- **KPIs:** This section lists the KPIs included in the report and their configuration within the model.
- **Sheet Filters:** This section contains filters that apply to the entire report sheet.
- **Columns:** In this section, you will find all column groupings and their associated filters.
- **Rows:** This section includes all row groupings and their respective filters.
- **Cells:** This section identifies specific cells with individual filters for the report structure.

If needed, adjust the report by adding or removing the necessary sections.

Note: the configuration sheet after making any adjustments is recommended to ensure the report remains current.