

Practice exercise – Answer Key

Manage project costs in Cost Management

The following steps were completed in the videos for **Module 3: Cost control with Forma Cost Management**. If you followed along in the videos, you are ready to start the exercise that follows these steps. If you have *not* already performed these steps, make sure to complete them first:

1. You activated Cost Management using freeform code in the Learn Build project you were invited to by your instructor on Autodesk Forma for Construction.

Get started by setting up budget code

Create segmented budget code	Use freeform code
✔ Enables filtering and grouping for better data analysis. ✔ Facilitates detailed and consistent cost categorization. ✔ Promotes efficient cost control and budget management. ✔ Offers customization to fit project needs.	① Has very limited filtering and grouping ability, reducing data analysis capabilities. ① May lead to potential inconsistencies in cost categorization. ① May cause inefficiencies later due to less structure. ① Lacks granularity in cost tracking and control.
① Requires more time and thought for the initial setup.	✔ No initial setup necessary, could be used for swift data entry and basic testing.

2. In the Settings page of Cost Management, in the General tab, under Budget and Contract allocation, you selected Multiple budgets to one Contract.

Budget and Contract allocation

☐ One budget to one Contract
☒ Multiple budgets to one Contract
☐ One budget to more than one Contract

Assign the same budget to multiple SOV items ☐

Designed for users who break down items for budget and Contract from different dimensions, resulting in multiple Contract SOV items linked to the same budget. When activated, you cannot show changes as columns in a Contract and its Cost Payment Applications.

3. In the Settings page of Cost Management, in the General tab, under Retention, you assigned 10% for the Budget Payment Application and the Cost Payment Application.

Retention

Default retention rates and caps are set project-wide but can be overridden at the Contract/Main Contract level. Adjustments can also be made on individual payment applications. Once modifications are made at the Contract/Main Contract or payment application level, changes made here will no longer apply.

	% of work completed	% of materials	Retention cap (% of Main Contract/Contract sum to date)
Budget Payment Application	10		
Cost Payment Application	10		

Calculate tax

☐ Before retention deduction
☒ After retention deduction

4. In the Settings page of Cost Management, in the Budget tab, you created a sample segment for the Code and imported the codes using the **Code List.xlsx** file in the dataset folder.

General
Budget
Cost
Change Order
Forecast
Permission
Activity

Budget code format

Budget code preview --

Sample segment 1 Segment 2

Segment details

Where: Code Number of characters: Flexible Delimiter: Point Segment code preview: --

Master list

Project specific: No Lock: ☐

Add Import

☐	Original code	System code	Description
☐	00 01 00	00 01 00	Documentation
☐	00 11 00	00 11 00	Advertisements and Invitations
☐	00 21 00	00 21 00	Instructions
☐	00 22 00	00 22 00	Supplementary Instructions
☐	00 23 00	00 23 00	Procurement Definitions
☐	00 24 00	00 24 00	Procurement Scopes
☐	00 25 00	00 25 00	Procurement Meetings
☐	00 26 00	00 26 00	Procurement Substitution Procedures

- In the Settings page of Cost Management, in the Budget tab, you created a sample segment for the Levels and imported the levels using the **Levels.xlsx** file in the dataset folder.

Settings

General **Budget** Cost Change Order Forecast Permission Activity

Budget code format

Budget code preview: --

Sample segment 1: Segment 2

Segment details: Where: Code, Number of characters: Flexible, Delimiter: None, Segment code preview: -

Master list: Project specific: No, Lock: ☐

Add Import

☐	Original code	System code	Description
☐	000	000	Underground
☐	001	001	First Floor
☐	002	002	Second Floor
☐	003	003	Third Floor
☐	004	004	Roof

- In the Budget tool, you uploaded the budget using the **Project Budget.xlsx** file in the dataset folder.

Home Budget

Budget Main Contract Budget Payment Application

Exit edit mode Add Import

☐	Budget Code	Budget Name	Qty	Unit	Original Budget Unit Cost
☐	03 06 40.000	Continuous Footings	1	LS	1,000.00
☐	03 06 70.001	Slab on Grade	1	LS	1,000.00
☐	03 08 00.000	Spread Footings	1	LS	1,000.00
☐	03 30 00.000	Underground Walls	1	LS	1,000.00
☐	03 30 00.001	First Floor Walls	1	LS	1,000.00
☐	03 30 00.002	Second Floor Walls	1	LS	1,000.00
☐	03 30 00.003	Third Floor Walls	1	LS	1,000.00

- In the Budget tool, you created a Main Contract with the Owner.

Home Budget

Budget Main Contract Budget Payment Application

Edit mode

Code	Name	Status
E... C...		
> MC1	Contract with Owner	Executed

8. You modified the dates of the contract to Start on September 1, 2026 and end on December 25, 2026 and created weekly billing periods.

Manage Master Schedule
×

Main Contract duration: Sep 1, 2025 - Dec 25, 2025
Add new periods

Billing Periods (17)	Payment Application		
Aug 31, 2025 - Sep 6, 2025	-		
Sep 7, 2025 - Sep 13, 2025	-		
Sep 14, 2025 - Sep 20, 2025	-		
Sep 21, 2025 - Sep 27, 2025	-		
Sep 28, 2025 - Oct 4, 2025	-		
Oct 5, 2025 - Oct 11, 2025	-		
Oct 12, 2025 - Oct 18, 2025	-		
Oct 19, 2025 - Oct 25, 2025	-		

Due Date:
After start date
▼
day(s) ⓘ

Clear all
Cancel
Save

9. In the Budget tab, you created a main contract schedule of values from all the budget lines.

Budget

Budget		Main Contract	Budget Payment Application		
Exit edit mode		Create Main Contract SOV	Allocate to Contract ▾		Delete
☒	Budget Code ↑	Budget Name	Qty	Unit	Original Budget Unit Cost
☒	03 06 40.000	Continuous Footings	1	LS	1,000.00
☒	03 06 70.001	Slab on Grade	1	LS	1,000.00
☒	03 08 00.000	Spread Footings	1	LS	1,000.00
☒	03 30 00.000	Underground Walls	1	LS	1,000.00
☒	03 30 00.001	First Floor Walls	1	LS	1,000.00
☒	03 30 00.002	Second Floor Walls	1	LS	1,000.00
☒	03 30 00.003	Third Floor Walls	1	LS	1,000.00
☒	05 12 00.000	Underground Columns	1	LS	1,000.00
☒	05 12 00.001	First Floor Columns	1	LS	1,000.00
☒	05 12 00.002	Second Floor Columns	1	LS	1,000.00
☒	05 12 00.003	Third Floor Columns	1	LS	1,000.00
☒	05 12 01.002	Second Floor Framing	1	LS	1,000.00
☒	05 12 01.003	Third Floor Framing	1	LS	1,000.00
☒	05 12 01.004	Roof Framing	1	LS	1,000.00

10. You created a contract with the concrete subcontractor based on Division 03 line items.

Home

Budget

Cost

Change Order

Forecast

Files

Reports

Members

Settings

Budget

Main Contract

Budget Payment Application

Exit edit mode

Create Main Contract SOV

Allocate to Contract

Delete

Budget Code

Budget Name

Create new

Allocate to existing

Original Budget Unit Cost

☒	03 06 40.000	Continuous Footings	:	1	LS	1,000.00
☒	03 06 70.001	Slab on Grade	:	1	LS	1,000.00
☒	03 08 00.000	Spread Footings	:	1	LS	1,000.00
☒	03 30 00.000	Underground Walls	:	1	LS	1,000.00
☒	03 30 00.001	First Floor Walls	:	1	LS	1,000.00
☒	03 30 00.002	Second Floor Walls	:	1	LS	1,000.00
☒	03 30 00.003	Third Floor Walls	:	1	LS	1,000.00
☐	05 12 00.000	Underground Columns	:	1	LS	1,000.00
☐	05 12 00.001	First Floor Columns	:	1	LS	1,000.00

11. In the details of this contract, under Manage Billing Periods, you clicked Inherit from Master Schedule.

Manage Billing Periods

×

☒ Inherit from Master Schedule

Contract with Owner

☐ Copy from a Contract

Enter name

☐ Create new

Cancel

Next

12. You created a contract with the steel subcontractor based on Division 05 line items and specified the correct billing periods using the same approach as the concrete contract.

Contract

Cost Payment Application

Expense

Edit mode

Analysis

Export

General		General				Original Allocat-	Int
Code	Name	Supplier	Status	Compliance	Type	ed Budget	
Sub 1	Contract with Concrete Sub	ABC	Executed	Not Applicable		7,000.00	
Sub 2	Contract with Steel Sub	ABC	Executed	Not Applicable		7,000.00	

13. In the Forecast tool, you added a reference to the schedule in Build, and linked each activity to its corresponding budget line item.

Forecast

Cost & Time					
Cash Flow					
Performance Tracking					
Select a task and a budget to link					
Task Name	Start	End	Duration (Days)	Source	
☐ Structural Model	Sep 1, 2025	Dec 25, 2025	84	Initial Construction	
☐ Start Milestone	Sep 1, 2025	Sep 1, 2025	1	Initial Construction	
☐ Finish Milestone	Dec 25, 2025	Dec 25, 2025	1	Initial Construction	
☐ Underground	Sep 1, 2025	Oct 28, 2025	42	Initial Construction	
☐ Continuous Footings	Sep 1, 2025	Oct 8, 2025	28	Initial Construction	
☐ Underground Walls	Sep 19, 2025	Oct 28, 2025	28	Initial Construction	
☐ Spread Footing	Sep 1, 2025	Oct 8, 2025	28	Initial Construction	
☐ Underground Columns	Sep 19, 2025	Oct 28, 2025	28	Initial Construction	
Budget Code	Budget Name	Schedule Task	Start	End	
☐ 03 30 00.000	Underground Walls	Underground Walls	Sep 19, 2025	Oct 28, 2025	
☐ 03 30 00.001	First Floor Walls	First Floor Walls	Oct 9, 2025	Nov 17, 2025	
☐ 03 30 00.002	Second Floor Walls	Second Floor Walls	Oct 29, 2025	Dec 5, 2025	
☐ 03 30 00.003	Third Floor Walls	Third Floor Walls	Nov 18, 2025	Dec 25, 2025	
☐ 05 12 00.000	Underground Columns	Underground Columns	Sep 19, 2025	Oct 28, 2025	
☐ 05 12 00.001	First Floor Columns	First Floor Columns	Oct 29, 2025	Oct 30, 2025	
☐ 05 12 00.002	Second Floor Columns	Second Floor Columns	Oct 31, 2025	Nov 3, 2025	
☐ 05 12 00.003	Third Floor Columns	Third Floor Columns	Nov 7, 2025	Nov 10, 2025	
☐ 05 12 01.002	Second Floor Framing	Second Floor Framing	Nov 4, 2025	Nov 6, 2025	
☐ 05 12 01.003	Third Floor Framing	Third Floor Framing	Nov 11, 2025	Nov 13, 2025	
☒ 05 12 01.004	Roof Framing	Roof Framing	Dec 8, 2025	Dec 10, 2025	

Once these steps are completed, you will be ready to start the exercise. You will configure Cost Management, work with budgets and payment applications, and forecast project costs.

Learning objectives:

By the end of this exercise, you should be able to:

- Create and manage payment applications.
- Forecast project costs using budget and schedule information.

Success criteria:

- Project budgets and cost items are created or imported correctly.
- Payment applications are created and linked to the project budget.
- Project costs are forecasted using current budget information.
- Exercise questions are completed and required items are submitted for review.

Follow the steps below to complete this practice exercise.

1. Create a cost payment application for the steel subcontractor for the billing period of Nov 1, 2026 – Nov 7, 2026. In this payment application, 100% of the work was completed for these activities: Second Floor Columns, Third Floor Columns, Second Floor Framing. The Second Floor Framing has an extra \$1,000 cost associated with it. Set this application as paid.

What is the total percent completion on the contract with the steel subcontractor?

Answer Key

The percent completion is 37.5%. Check the work of the student on Autodesk Forma for Construction Cost Management.

[Cost Payment Application](#) /

Contract with Steel Sub ▾

Nov 1, 2026 - Nov 7, 2026 ▾

<

>

Paid

[View associated Budget Payment Application](#)

General		This Period		Total Work Completed	
		Work Completed			
Number	Name	Amount	% ...	Amount	% ...
Expand Collapse					
Sub2-01	Contract with Steel Sub-PA001	3,000.00	37.5	3,000.00	37.5
▼ Schedule of Values		3,000.00	37.5	3,000.00	37.5
05 12 00.000	Underground Columns	0.00	0	0.00	0
05 12 00.001	First Floor Columns	0.00	0	0.00	0
05 12 00.002	Second Floor Columns	1,000.00	100	1,000.00	100
05 12 00.003	Third Floor Columns	1,000.00	100	1,000.00	100
05 12 01.002	Second Floor Framing	1,000.00	100	1,000.00	100
05 12 01.003	Third Floor Framing	0.00	0	0.00	0
05 12 01.004	Roof Framing	0.00	0	0.00	0

2. Complete the following steps:

- For the same billing period, create a budget payment application.

Budget

Budget Main Contract **Budget Payment Application**

Contract with Owner ▾ Nov 1, 2026 - Nov 7, 2026 ▾ < > **Draft**

+ Add Change Order [View associated costs](#)

- In the associate costs, add the completed cost payment application you created in the previous step, then aggregate the costs.

Aggregate costs ⓘ Export ▾

Cost Payment Application

+ Add ▾

Name	Status	⚙️
Contract with Steel Sub-PA001	Paid	⋮

- Set the budget payment application as paid.

Budget

Budget Main Contract **Budget Payment Application**

Contract with Owner ▾ Nov 1, 2026 - Nov 7, 2026 ▾ < > **Paid**

[View associated costs](#)

This Period

Paid Contract with Owner-PA003
Budget Payment Application

Expand | Collapse ⚙️

✓ Application paid

Revert to Approved

- What is the remaining balance on the contract with the owner?

Answer Key

The remaining balance is \$9,800.

Budget

Budget

Main Contract

Budget Payment Application

Contract with Owner

Nov 1, 2026 - Nov 7, 2026

<

>

Paid

Revert to Approved

View associated costs

Amount & percentage view

General		This Period Work Completed		Total Work Completed		This Application Materials Stored		Completed and Stored		Remaining Balance	
Number	Name	Amount	% ...	Amount	% ...	Amount	% ...	Total	% ...	Amount	% ...
Expand Collapse											
MC1-03	Contract with Owner-PA003	3,000.00	20.69	4,700.00	32.41			4,700.00	32.41	9,800.00	67.59

3. Complete the following steps:

- In the Forecast tab, create one distribution item for the three activities you included in the cost payment application.

Add distribution item ×

Add distribution item based on

Budget ▼

Select budgets

Group by budget code segment ▼ Search by code or name...

Budget code	Budget name
03 30 00.001	First Floor Walls
03 30 00.002	Second Floor Walls
03 30 00.003	Third Floor Walls
05 12 00.000	Underground Columns
05 12 00.001	First Floor Columns
☒ 05 12 00.002	Second Floor Columns
☒ 05 12 00.003	Third Floor Columns
☒ 05 12 01.002	Second Floor Framing

- Distribute their cost over their respective start and end dates using a front-loaded curve.

Cash Flow / Projected Budget ▼

+ Add distribution item Analysis Export Amount Input Qty Amount % Input Qty % By period ▼ Default view ▼

Number	Name	Actual Total	Distribution Total	Undistributed	Week Ending Oct 02	Week Ending Oct 09	Week Ending Oct 16	Week Ending Oct 23	Week Ending Oct 30	Week Ending Nov 06	Week Ending Nov 13
	Projected Budget Total	14,500.00	4,000.00	10,500.00	41.92	3.34				2,000.00	1,000.00
	Not in distribution items	10,000.00		10,000.00							
	Continuous Footings	1,500.00	1,000.00	500.00	41.92	3.34					
	Second Floor Columns	1,000.00	1,000.00	0.00						1,000.00	
	Third Floor Columns	1,000.00	1,000.00	0.00							1,000.00
	Second Floor Framing	1,000.00	1,000.00	0.00						1,000.00	

- Look at the cash flow analysis chart, for the week ending in Nov 6, 2026, what are the values of the cumulative work completed and the cumulative actual cost? Why are they different.

Answer Key

The cumulative work completed is \$3,700 and the cumulative actual cost is \$3,300. The difference is \$370 which is equal to the retainage.

Forecast

