CS469514-L

A Checklist to Build Checklist Templates in BIM 360 Field Management

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Learning Objectives

- Learn about Account Admin and Project Admin roles in designing and implementing Checklist Templates.
- Learn how to easily create Quality, Safety, Commissioning, or Punch List Checklist Templates.
- Learn how to create Checklist Templates from scratch and configure checklist Items and integrate Issues.
- Learn how to link Checklist Templates to Assets and Asset Categories
- Learn how to export Checklist data

Description

Project quality control and safety are critical to a project's success. Having access to tools to easily standardize, input, and resolve quality control and safety issues can improve utilization of such tools on a project. BIM 360 Field Management software enables teams to quickly create and implement checklists on a project based on existing templates or created from scratch. This class will provide site admins with best practices for developing several types of checklists for field management in BIM 360 Build software. Learn tips and tricks for creating effective checklist templates for designers, project engineers, contractors, and commissioning agents. Design and implement checklists not only for managing the current project process, but also for efficiently transferring collected data for project turnover to BIM 360 Ops software or other databases.

Speaker(s)

Nauman Mysorewala, an Autodesk Expert Elite, has more than 25 years of experience with the Autodesk® family of products including AutoCAD®, AutoCAD Architecture, Revit®, BIM 360 & Navisworks®. He is a Registered Architect, Revit Architecture and AutoCAD Certified Professional, LEED® AP, and an authorized Autodesk Services Marketplace provider. Nauman has presented at AU and numerous Autodesk Build your IQ webinars for AutoCAD and Revit in collaboration with Autodesk. He has been an Educator at University of Cincinnati & Mount St. Joseph University teaching design technology applications. He has wealth of experience troubleshooting complex architectural, computer, connectivity and software issues. He enjoys discovering new products and technologies and implementing them in the built environment. He loves to garden and has been experimenting with propagating and grafting fruit trees.

Contents

DATASET

DATASET CAN BE DOWNLOADED FROM
https://bit.ly/AU2020-CS469514L

Checklists

Checklists are part of the Field Management module in BIM 360 Build. It integrates well with the Issue Management system of the main BIM 360 ecosystem. Checklists allow the project team to create standard forms to capture, review and follow through completion for quality and safety related tasks and issues. The data collected is used to analyze trends via Insight on the Project Dashboard or export for use and analysis outside the BIM 360 ecosystem.

Checklists are divided into two main categories of Safety & Quality Management and further broken down into four types:

Checklists Categories and Types

- **Safety Management**
  - **Safety** - Allows onsite staff to perform health and safety related inspections and capture data for compliance and tracking incidents.
- **Quality Management**
  - **Quality** - Perform quality assurance checks.
  - **Punch List** - Perform onsite inspections capturing and tracking quality issues and seeing them through completion.
  - **Commissioning** - Validation of building performance and data capture.

SAFETY CHECKLIST

Essentially, they are all the same under the hood, but allow project teams to classify by types for organization and tracking. The basic process involves creating templates and utilizing templates to create Checklists. Account and Project Admins can create Checklist templates. Once the template is created the actual Checklist can be generated from the template and utilized. Checklists can be assigned to specific team members based on Roles, Company or individuals. These can then be utilized for tracking quality, punch lists, safety, and commissioning progress tracked for completion and the data can be validated by utilizing required fields and signatures.

No matter which category/type the Checklist falls under, the process of creating a Checklist template and then creating a checklist is the same. This session will walk you through the step by step process of creating a Checklist template utilizing various methods integrating Issue Management, Assets and validation using signatures. Data analysis and using the Project Dashboard Insight is not part of the scope of this class.

Checklist Templates

For creating Checklists, there needs to be a Template that can be used to create multiple Checklists of the same type.

Templates can be either Account-level or Project-level

- **Account-level Templates**
    - Only Account Admins of the managing company can create, update and publish templates to multiple projects.
    - Multiple projects within the same account can utilize the templates
    - Can be updated and republished across multiple projects
- **Project-level Templates**
    - Requires Project Admin rights to create or update templates
    - Project Admins can allow other team members based on Company, Role, or individuals to create or update templates.
    - Cannot be utilized by other projects within the same account

For detailed information about permissions related to Checklist refer to this AKN page.
http://autode.sk/3o4METt

There are two main methods of creating a Checklist template:

- Web based Template Builder
- Import
    - Pre-built
    - Field Classic export
    - Excel

Prior to building any Checklist templates it is important to understand the differences between Account-level and Project-level templates as well as using the web-based Template Builder and Excel.

As of November 2020, there are some serious limitations when it comes to Checklist templates. A forum post from 2018 talks about these as well http://autode.sk/3j6mX0V . Since Autodesk is continually updating BIM 360 capabilities, they may update this in the future. These limitations are:

- Cannot export Account-level or Project-level templates to Excel as one could in BIM 360 Field Classic. This limits the ability for a company working on multiple projects hosted on different accounts to reuse them.
- Account-level templates can be utilized by multiple projects; however, these must be within the same account.
- Project-level templates cannot be promoted to Account-level for utilization by other projects within the same account.

With these current limitations, it is best to utilize Excel to create Checklist templates as these can be utilized without limitation, but it is not as easy as the Checklist Template Builder. However, an imported template can be edited in the Template Builder. As mentioned before, this may change in the future and my reason for date stamping this section. Refer to BIM 360 Field Management Blog for feature updates http://bit.ly/2H6vaFL and visit the BIM 360 Ideas forum to vote on the idea related to these limitations http://autode.sk/3m11iJt or propose your own idea if it does not exist.
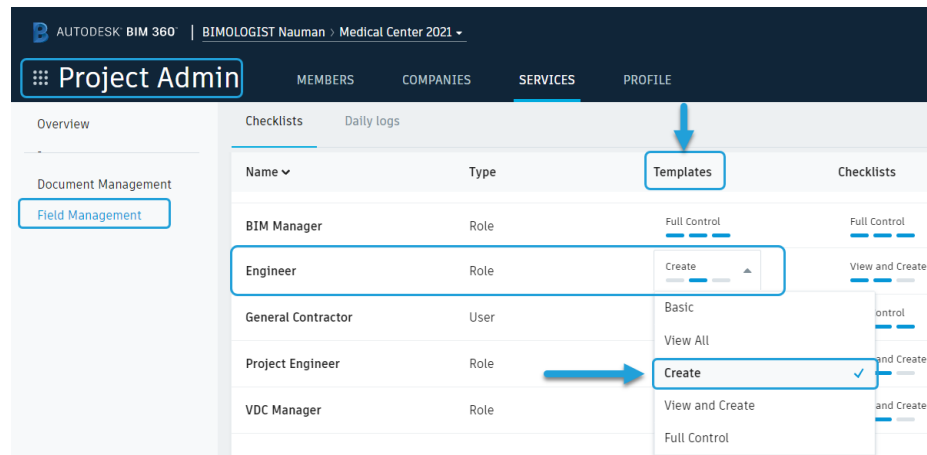
Creating a Checklist Template

For this class we will create templates in the Project environment since this will allow most users to complete the lab.

CHECKLIST: Pre-requisites for Checklist Template Creation

☐ Autodesk ID

☐ BIM 360 Build license

☐ Project membership for non-Account-level templates

Required Permissions:

    ☐ Account Admin for Account-level templates

    ☐ Project Admin for Project-level templates, Creating Checklists, Assigning User permissions

    ☐ Minimum **Create** permission for Templates and Checklists.

☐ Internet connection

☐ Compatible web browser http://autode.sk/3mgj5wD
Note: Template creation is not supported via the BIM 360 app

ADDING PERMISSIONS FOR CREATING TEMPLATES

Exercise 1: Navigate to Templates Section

For all subsequent exercises, the first step is to navigate to the Templates section of the Field Management module.

□ 1. In BIM 360, click the Module Selector → Field Management

□ 2. Under the CHECKLISTS tab click on Templates
This section contains a list of all Project Checklist templates, buttons to Create new template or Import a template from the local computer.

NAVIGATING TO CHECKLIST TEMPLATE LIST

Creating Checklist Template Using Web-based Template Builder

The Template Builder tool is intuitive and allows team members to quickly create a template using a GUI based interface.

Exercise 2: Start a New Template from Scratch and set template details

In this exercise you will start the process of creating a new template, naming it, assigning Checklist Type and set Issue related options. Using the Template Builder, you will be creating a Quality template for CSI (Construction Specification Institute) specification MasterFormat® Division 09 Finishes, sub-section 09-3000 Tiling.

□ 1. On the Templates page click on **Create new template**

□ 2. For **Title** type *09-3000 Tiling*.
Title - required - Name of the Checklist template

□ 3. Leave the **Description** blank as it is optional.
Description - optional. This can be changed afterwards

□ 4. Using the drop-down select *Quality* for **Type**.
Type - required - Safety, Quality, Punch List or Commissioning

□ 5. Leave the last three options as default

□ a. **Issue settings** - Specify Issue defaults and whether to create the issue due to non-compliance. It is best to control this setting per Item (question) rather than for the overall template for better granularity if desired.

□ b. **Allow adding section assignee** - Each Checklist is assigned to one team member by default. can If enabled each section of the Checklist can be assigned to different team members.

□ c. **Require signatures on checklist completion** - Enable it to require signature validation prior to completing the Checklist. Multiple signatures are also supported. Currently signatures can only be done via the BIM 360 mobile app.

□ 6. Click **Next** and follow the next exercise **Customize Section and Create Multiple Items in a Checklist Template.**
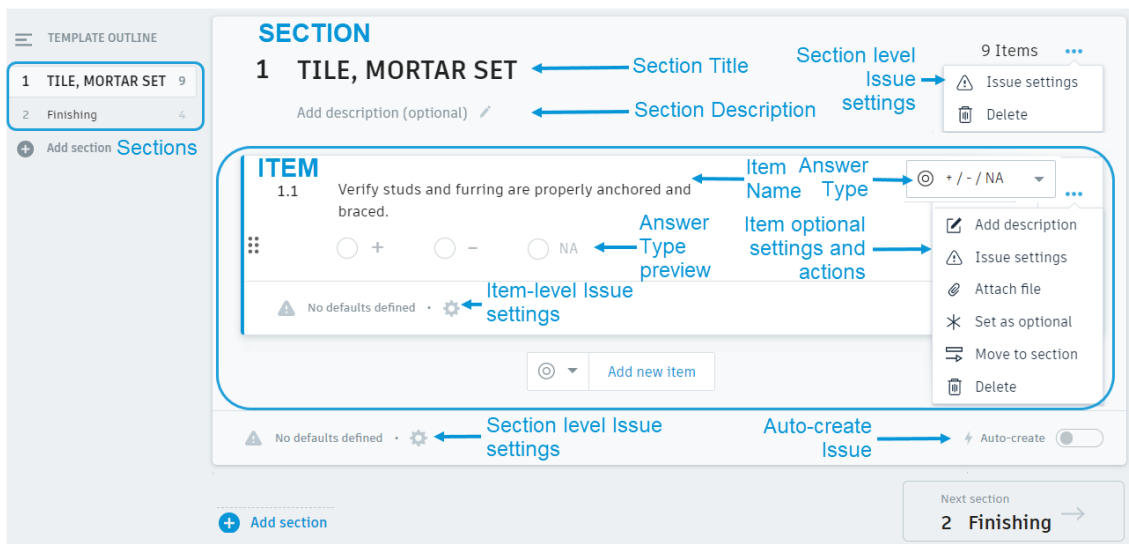
Checklist Template Elements

A Checklist Template consists of two main components, Section and Items.

Sections

Sections allow dividing a Checklist into groupings of Checklist Items that are related to each other. When filling out a Checklist, each Section appears as a separate page and are listed in the Checklist Outline sequentially numbered based on their order. This order can be changed anytime.

- **Section Title** - A required field to identify the Section. Keeping the Title generic allows the team to create multiple Checklists based on the same template. For example, naming a Section *Equipment* instead of *HVAC Equipment* will allow the team to use the template for other types of equipment that have the same items.
- **Section Description** - Prior to creating a Checklist from a template, teams can change the Description to further describe the Section Title for each specific Checklist. In the above example of naming the Title *Equipment*, the description can be used to add specifics for HVAC Equipment, Plumbing Equipment, etc. if they are sharing the same Items.
- **Issue settings** - optional, each Section can be configured with a pre-defined issue creation. Accessed via ••• More menu.
- **Auto-create** - optional, if a predefined Issue is enabled, any Item that is non-conforming, an issue can be automatically created.

Items

Items are like questions in a survey. Response to Items can be made optional or required. Optionally a customized pre-defined Issue can be associated with each Item and optionally auto-created due to non-conformance. Each Item has a sequential number based on the Section number and the order of Items in the Section.

- ▫ **Name** - required, Question, instruction, or brief text.
- ▫ **Answer Type** - The type of response required.
    - • **Yes / No / NA**: Creates a radio button answer field with these selections.
    - • **True / False / NA**: Creates a radio button answer field with these selections.
    - • **Pass / Fail / NA**: Creates a radio button answer field with these selections.
    - • **+ / - / NA**: Creates a radio button answer field with these selections.
    - • **Multiple Choice**: Add suitable answers and use the slider to select a non-conforming answer. Non-conforming answers keep track of work that needs to be corrected.
    - • **Checkboxes**: Add items boxes to check off for a particular item and use the slider to select non-conforming answers. There is a 50 character limit for the text.
    - • **Text**: Create a text field for answers to be entered in the field.
    - • **Numeric**: Creates a field that requires a number for an answer.
      Date: Creates a calendar field to select a date.
      (From AKN: http://autode.sk/2FP6ReI)
- ▫ **Description** - optional, not visible unless enabled under More menu ••• → *Add description*
- ▫ **Issue settings** - optional, each item can be configured with a predefined issue creation. Accessed via ••• More menu or clicking on the setup icon within the item.
- ▫ **Auto-create** - optional, if a predefined Issue is enabled for the Item's non-conformance response, an issue can automatically be created. Use slider to enable within the item or under *Issue settings*.
- ▫ **Attach file** - optional, files in either Plans or Project Files folders can be attached to an item. Verify that the team that this template will be assigned to has permission to access the file.

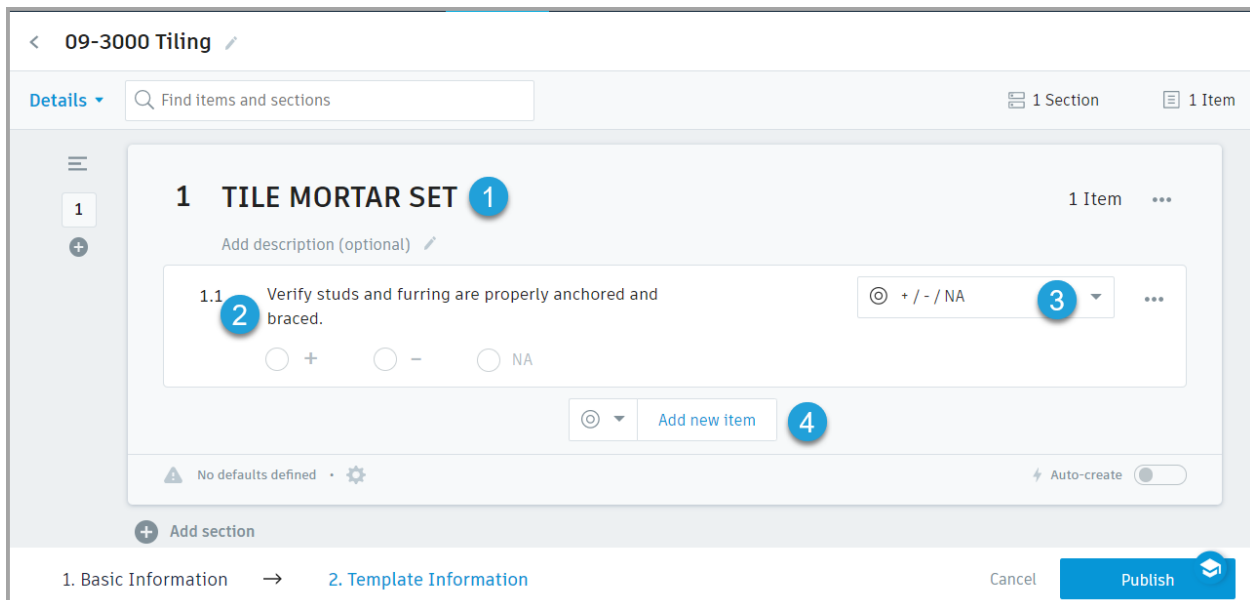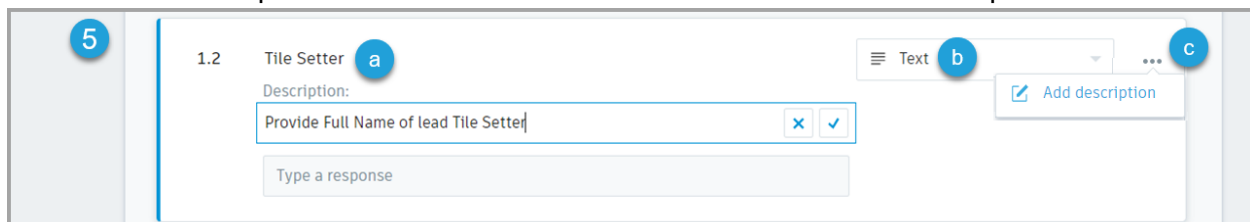|	
◎	+ / - / NA
◎	Yes / No / NA
◎	True / False / NA
◎	Pass / Fail / NA
◎	+ / - / NA
◎	Multiple Choice
☑	Checkboxes
≡	Text
⠿	Numeric
🗓	Date

Exercise 3: Customize Section and Create Multiple Items in a Checklist Template

This exercise is a continuation of the previous exercise where you started creating a Quality type Checklist template. When a template is started, by default there is already a Section and an Item created. The goal is to customize the default Section and Item plus add other Items with different Answer Types in the Section.

□ 1. Change the Section Title by hovering over the text **New Section**, clicking and typing "TILE MORTAR SET." You can skip the adding a description.

□ 2. Change the default Item 1.1 by hovering over text **New Item**, clicking and typing "Verify studs and furring are properly anchored and braced."

□ 3. Use the drop down change the **Answer Type** from Yes / No to + / - / NA.

□ 4. Click on "**Add new item**"

□ 5. You will create a Text input Item to capture the name of the Tile Setter. In Item 1.2 Change:

□ a. Item Name to "Tile Setter,"

□ b. Answer Type to Text,

□ c. Click on More menu ••• and select **Add description**. This will allow you to provide further detail for the Item. Type "Provide Full Name of lead Tile Setter." In the description box and click on the checkmark at the end of the input box.

□ 6. In this step you will create a new Checkboxes Item but instead of clicking on Add new item click on the dropdown arrow and select **Checkboxes**. This will add a Checklist based Item
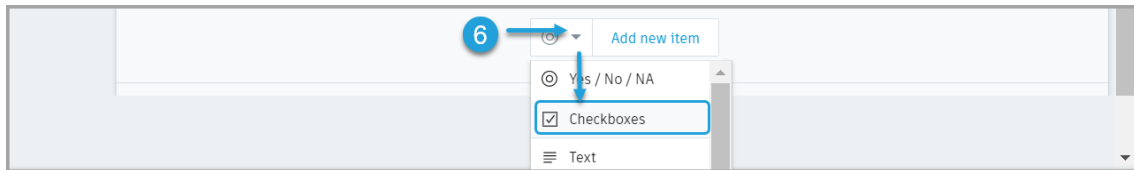
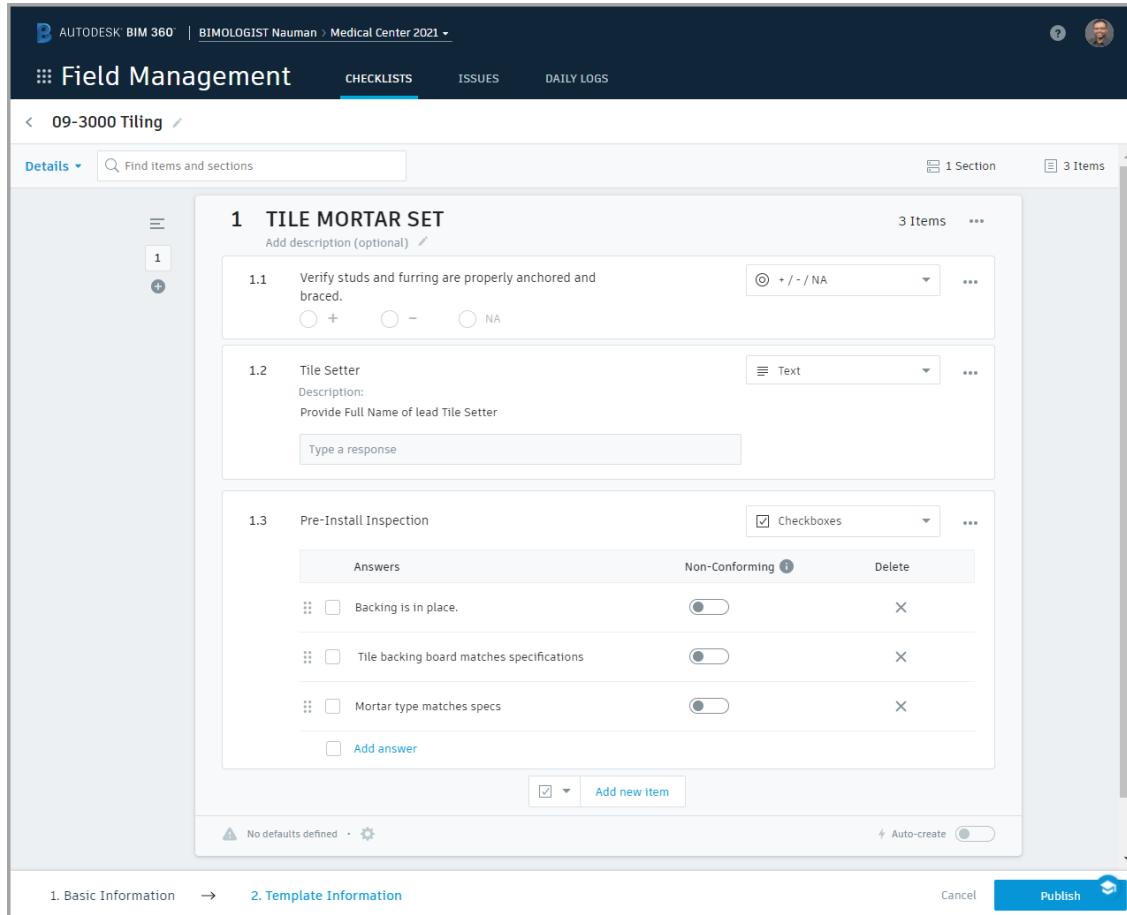□ 7. 1You will create a checklist for Pre-Install Inspection by editing Item 1.3.

    □ a. Edit the Item Name to "Pre-Install Inspection"

    □ b. Click on Answer 1 and type "Backing is in place"

    □ c. Click Add answer and type "Tile backing board matches specifications"

    □ d. Click Add answer again and type "Mortar type matches specs"
       If the Specifications have been uploaded to the Project, this Item would be a great place to attach files related to the inspection.
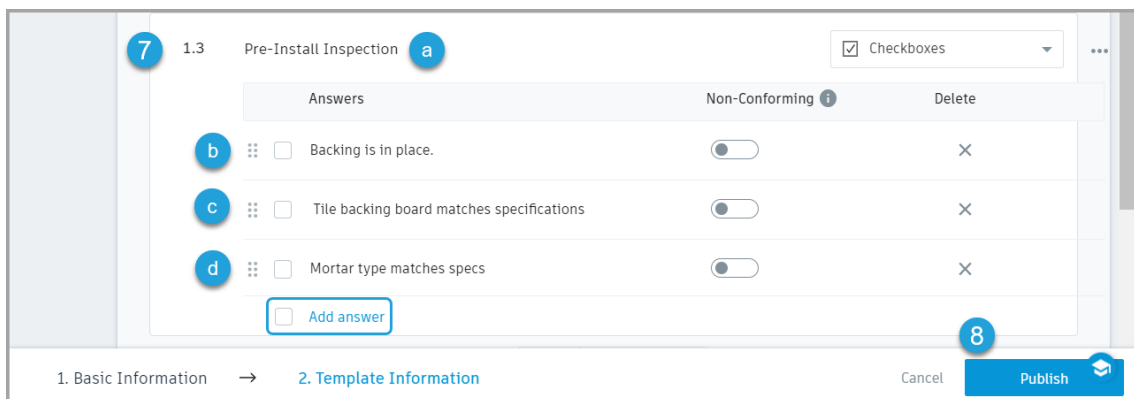
□ 8. Click on **Publish** to save the template and make it available for use.

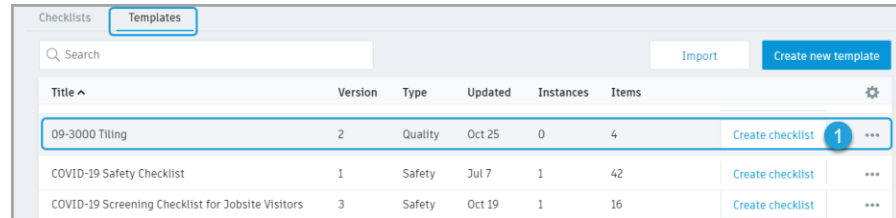At the end of the exercise the template should look like this

Create Checklists from Checklist Templates

Now that you have created a template, it's time to test it out the template. In this exercise you will create a Checklist based on the recently created template, assign it to a specific team member based on Role, Company or the least preferable way, by User.

Exercise 4: Create a Checklist from the template 09-3000 Tiling

This class focus is mainly on the template creation, so this exercise will be brief.

☐ 1. Click **Create checklist**.

☐ 2. This will start the new checklist based on the template and the focus will be set to the name 09-3000 Tiling with the opportunity to rename it. The reason for keeping the templates generic is that they can be used for multiple items within the same specification section needing same inputs. When creating a checklist, specific details can be added if desired. Go ahead and change it to 09-3000 Tiling - Ceramic Tiles.

☐ 3. Test out by filling in the information in the 3 Items that you created. Test how the radio buttons, text input or checkboxes work within the checklist. You can also try to attach documents, photos, note or create an issue associated with the specific Item. (For any attachments, the file needs to be in the Plans or Project Files folder)

☐ 4. Details Panel:

    ☐ a. On the right side of the web page, the Details panel is opened by default. Click on the ⓘ icon to open or collapse the panel.

    ☐ b. Here you can associate the Checklist to a specific Location where this Checklist applies and provide the Scheduled start date.
Locations must be predefined in the system. Refer to this AKN article for further details on topic http://autode.sk/35jcbiY . They are optional for project; however, are extremely important to perform Quality related checklists.

    ☐ c. There is also the opportunity to associate this Checklist to an Asset that has been pre-defined in the system. There is some prework to setup Assets workflows in BIM 360 Field Management and would are out of the scope of this Lab. Refer to AKN article http://autode.sk/31AUqe1 . However, a quick setup guide has been discussed in **Exercise: Linking Assets and Checklists**.

Click Done at the bottom of the page to close the Checklist.

Updating Templates

Exercise 5: Modifying the Template

In the last exercise you tested the template by creating a Checklist. After a review of the template's functionality, you realized that there were some items that could be improved, and you needed to add some other Items to the template. Let's review how the template can be updated.

- Add the inspection item in 1.1 to the 1.3 Pre-Install Inspection by creating a new checkbox
- Move Item 1.2 to the bottom of the section
- Delete the Item that was moved to the Pre-Install inspection
    - □ 1. Browse to the Templates list under Field Management →CHECKLISTS
    - □ 2. Click on the More menu ••• and select Edit.

    - □ 3. Under 1.3 Pre-Install Inspection
        - □ a. Click Add answer at the bottom of the checkbox list and type "Studs/Furring properly anchored and braced" and press Enter key or click on checkmark.
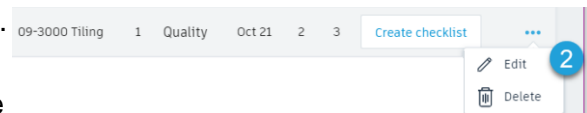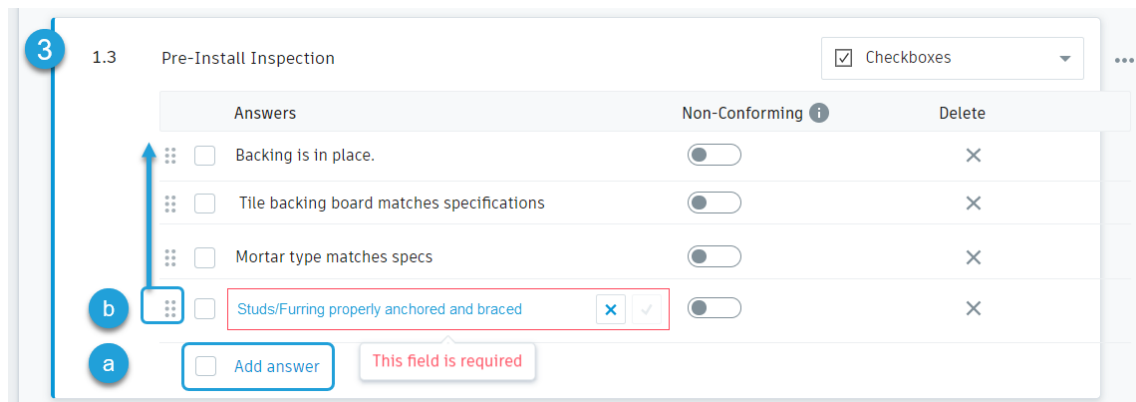   - □ b. The Studs/Furring should be the first item to check as on needs the structure to mount anything. Hover over the Move icon ⠿ and press and hold left mouse button and drag Studs/Furring to the top of the list.

    - □ 4. In this section, let's make the Tile Setter name be the last item. Hover over ⠿ in Item 1.2 and press and hold left mouse button and drag below Item 1.3. Once the action is completed the numbering will update and 1.2 will become 1.3.
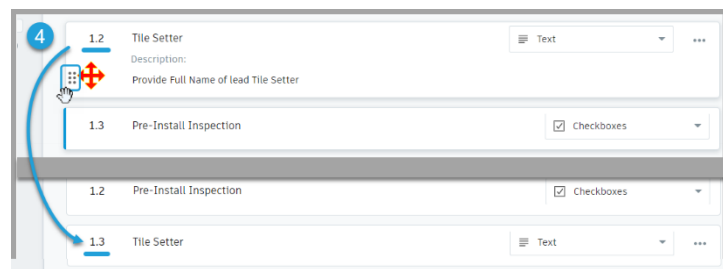
☐ 5. After adding the inspection item from 1.1 to Item 1.3 in step 3, Item 1.1 can be deleted.
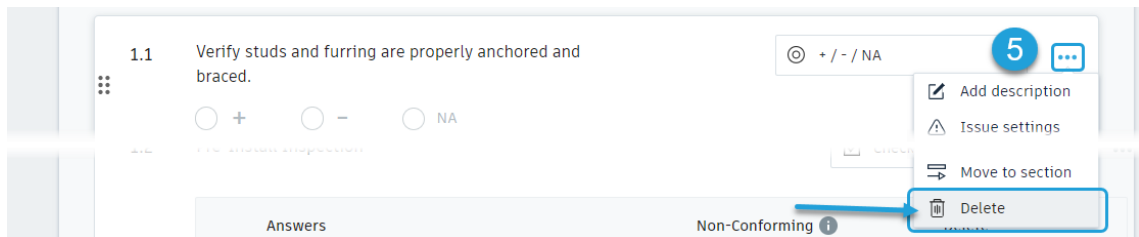
☐ 6. Verify that that at the end of the exercise, the page should look like this. Click **Save** to return to the Template list.
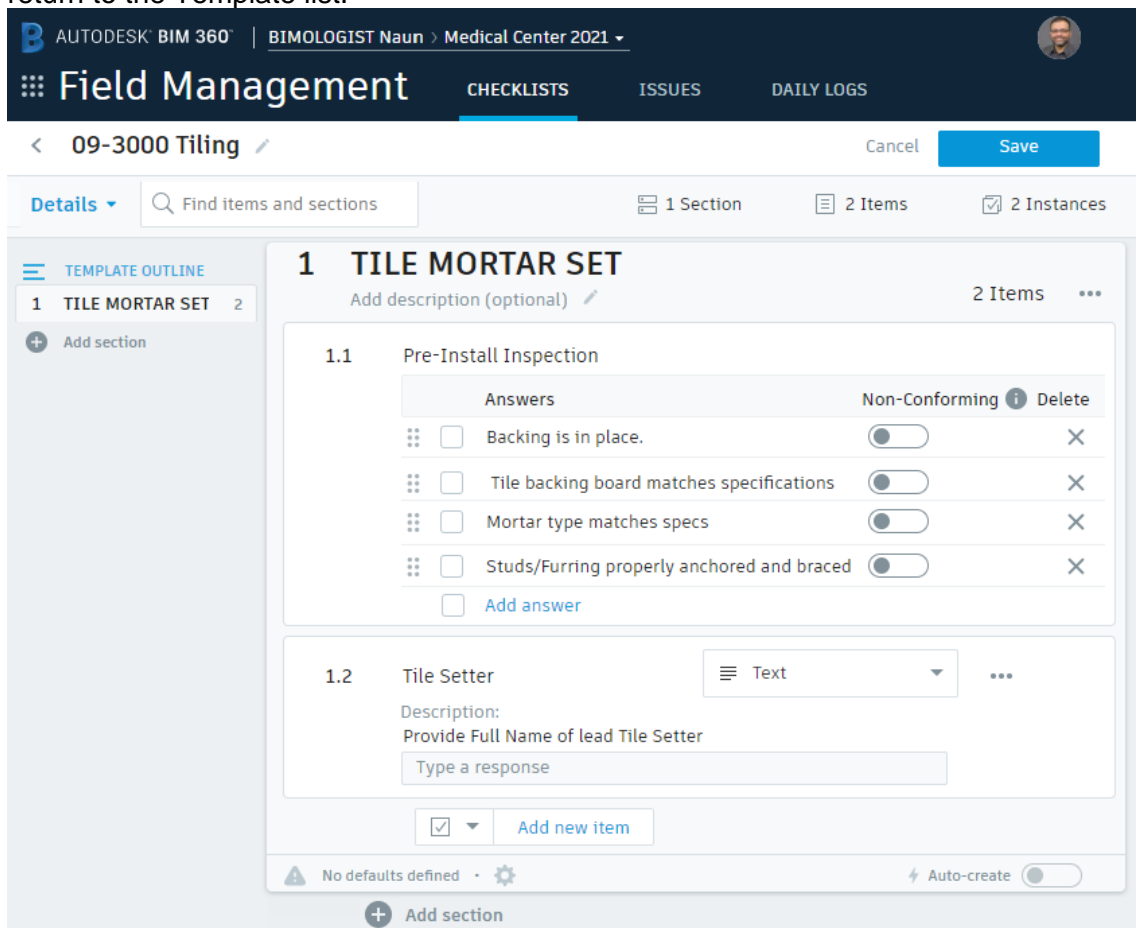
Exercise 6: Adding a new Section to the Template

The next step is to learn how to add a new Section to the Template.

☐ 1. From the Template list click on the More menu ••• and select **Edit** on the template you have been working on.

☐ 2. At the bottom of the Item List click **Add added item**. A new Checkboxes Item will be created.

☐ 3. Item 1.3

    ☐ a. Type "Grout Color Test" for the name of the Item 1.3

    ☐ b. Change Item Type to **Pass / Fail / NA** and click **Change** at the confirmation dialog box.

    ☐ c. Click on the More menu ••• and select **Add description.** Type "Prior to grouting all tiles, apply grout in a 2 tiles x 2 tiles area, clean and seal. Verify grout color matches specified color and provided sample"

After adding Item 1.3, you realize that the inspection item does not fall under the Mortar Set activities, rather it is best suited for a separate Section as it will be performed after the tiles have been set in place. Let's create a new Section and move Item 1.3 to the new Section. Also, add some inspection items to brush up on what you learned in prior exercises.

☐ 4. Click ☰ to expand the Section list on the left side. Click **Add section** ⊕ Add section under TEMPLATE OUTLINE or at the bottom of the page. Change the Section Title to "TILE FINISHING". The new Section will be Section 2, being sequentially numbered.

    TIPS:
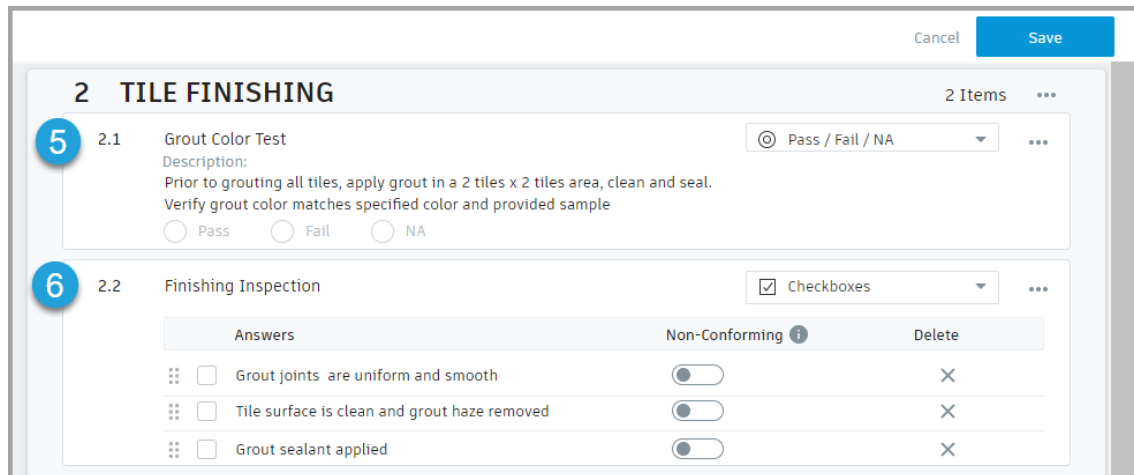
        • Expanding the OUTLINE is not necessary as a new Section can be added by clicking on ⊕ in the collapsed list.

        • The Section order can be changed easily just like how the Item or the checkbox list item was reordered in the previous exercise. Do not perform this action for the exercise.
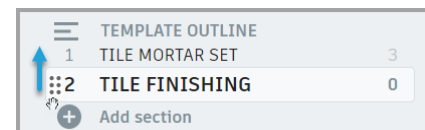
☐ 5. To move Item 1.3 to the new Section 2

    ☐ a. Click the entry in the Template Outline **1 TILE MORTAR SET** or click **Previous section**.

    ☐ b. Click on the More menu ••• of Item 1.3 and select **Move to section**.

    ☐ c. In the pop-up dialog select TILE FINISHING using the dropdown and click **Move**. This will move the Item to Section 2 and will become 2.1.

        TIP: The moved Item is always appended at the end of the Item list and can be moved as required.

    ☐ d. Click on **Next section** to return to Section 2.

☐ 6. Click **Add new item** to add a new **Checkboxes** Item.

    ☐ a. Set Item Name to "Finishing Inspection"

    ☐ b. Create three Answer checkboxes

        ☐ i. "Grout joints are uniform and smooth"
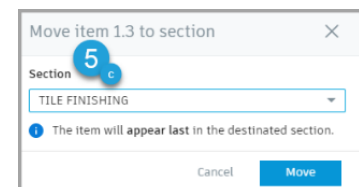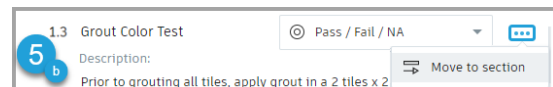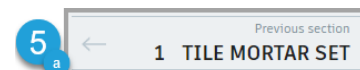
☐ ii. "Tile surface is clean and grout haze removed"

☐ iii. "Grout sealant applied"

☐ c. Click **Save**

☐ d. Test the updated template by creating a new Checklist from the template.

Exercise 7: Associating Issues with an Item for non-conformance

The full potential of the Checklists is realized when the team can track non-conforming items found during performing inspections for safety and quality. Pre-defined Issues can be associated at various levels of the Checklist.

- Checklist
- Section
- Item

In this exercise you will learn how to associate an Issue to a specific Item. The process is the same for Checklist or Section Issues and each item or Section can be configured individually. The concept is to create an issue if one of the checks fail, i.e. the user picks -, No, Fail, etc. In this case, you want to define a pre-defined issue to notify the General Contractor to follow through and make sure the other trade contractor has performed their work correctly. You also want to create the issue automatically, so the user does not have to manually create an issue, fill out all the fields and assign it to the correct team.

☐ 1. From the Template list click on the More menu ••• and select **Edit** on the template you have been working on.

☐ 2. Using Template Outline switch to Section 2. For Item 2.1 click the setup at the bottom of the Item to configure Issue settings. ⚠ No defaults defined · ⚙

□ 3. Fill out the Issue presets as shown in the image and click **Save**. Since Issues are not part of the scope of this class, refer to detailed help on **Issues** on BIM 360 AKN at http://autode.sk/3dUReix

□ 4.   Click Save to return to the Template list.

□ 5. Test the updated template by creating a new Checklist from the template. When filling out Item 2.1 select Fail. This will automatically create an issue.
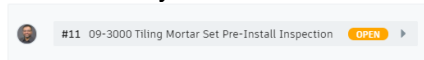
TIP: For Checkboxes Non-Conforming is turned off by default for all checks in 1.1. Meaning that this Inspection requires a checkmark. If the question in 7b. was Backing not in place, then by checking the box, the inspection fails. In this case the slider should be set to Non-Conforming. If the inspection fails and Issue is set to Auto-create, the system will geenrate a new Issue based on the settings defined

Importing Templates

In the beginning of this handout pros and cons of manually defining templates using the web builder or using Excel templates were discussed. There are three ways one can find Excel files to import.

- ☐ 1. **Pre-built** - Some templates are available on Autodesk BIM 360 Resources page
    - ☐ a. https://www.autodesk.com/bim-360/quality-management-toolkit/
    - ☐ b. https://bim360resources.autodesk.com/safer-with-technology

- ☐ 2. **Field Classic** - If the company has templates that were defined in Field Classic, these can be exported out and imported in to the new BIM 360 Field Management Checklists. The Pre-built checklists in item 1 above, are also in Field Classic format.
    TIP: If the company has access to Field Classic, it is an excellent resource for hundreds of pre-built templates that can be used to create a checklist and then exported to be used in new BIM 360 Field Management module. http://autode.sk/37M2Djr . The process is to create a new checklist based on From Account Checklist templates under Vela Samples, and then exporting them out.
- ☐ 3. **Manually built in Excel** - A sample template can be downloaded from the Import dialog within BIM 360 Field Management Checklists and used to developed new Checklists. As mentioned before, currently this is the only way to make the Project-level templates available between multiple projects or accounts.

Exercise 8: Importing Predefined Templates

In this exercise you will be importing a Pre-built template from the OSHA Safety Checklists download.

□ 1. Browse to https://bim360resources.autodesk.com/safer-with-technology and download the OSHA Safety Checklists. Extract the Construction Safety Checklist Toolkit files in to a folder.

□ 2. Browse to BIM 360 Field Management Checklists Templates list and click **Import**.

Import

□ 3. Select the Import Template from Classic Field radio button

□ 4. In the Import Template from Classic BIM 360 Field dialog, select:
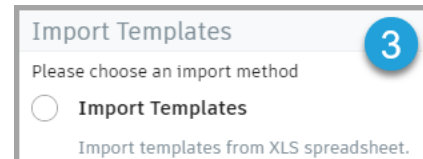
□ a. **Safety** from Template type

□ b. **Safety** from Issue Type drop-down menus

□ c. Click **Browse Files** and locate the file "OSHA 2209 - PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.xls" from the extracted Toolkit under the "Construction Safety Checklist Toolkit\Sample OSHA Checklists" folder.
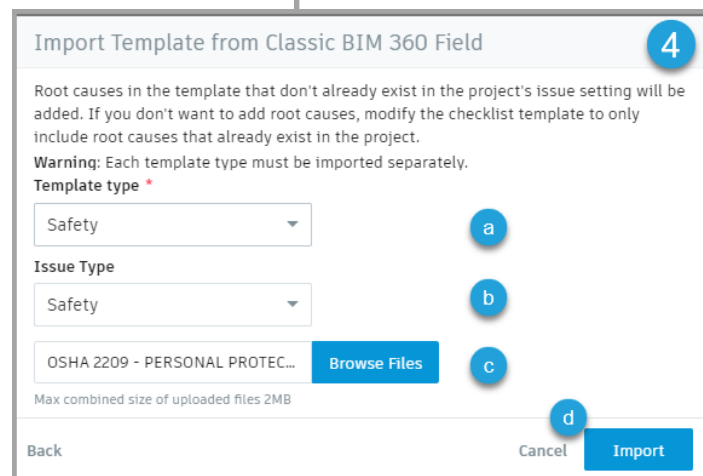
□ d. Click **Import**.

□ 5. You will be taken to the Template edit mode. Click on Details to expand the drop-down. Based on your setting in the previous dialog box of assigning the Template a **Safety** Issue, any non-conformance any one or more Items will auto-create an Issue. Click on the Settings icon to further customize Issue settings.

□ 6. Test out the Template by creating a Checklist.
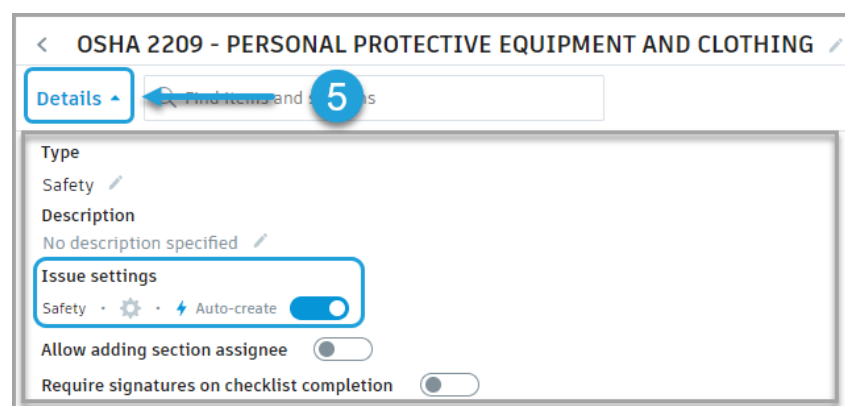
Exercise 9: Creating a custom Excel Checklist Template for Import

In the previous exercise you downloaded a predefined template from Autodesk website that was based on an export from BIM 360 Field Classic. In this exercise the goal is to download a sample template, customize it and then import it in as a new Template. Using Excel to define a Template makes it the best option due to its portability for importing in any Account or Project.

□ 1. Browse to BIM 360 Field Management Checklists Templates list and click **Import**.

Import

□ 2. Select the **Import Templates** radio button and click **Next**.

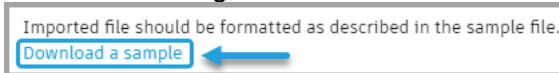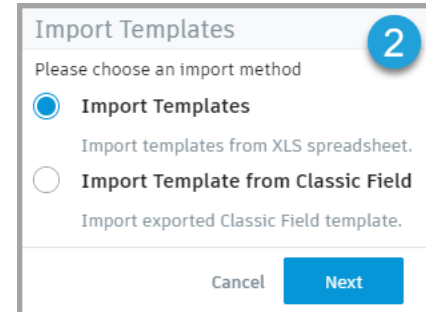□ 3. In the next dialog, click on **Download a sample**.

Imported file should be formatted as described in the sample file.
Download a sample

Import Templates ②

Please choose an import method

● **Import Templates**
Import templates from XLS spreadsheet.

○ **Import Template from Classic Field**
Import exported Classic Field template.

Cancel   Next

□ 4. Save the file on your local machine and open it in Excel or any other spreadsheet software capable of reading/writing .xls file format.

□ 5. The sample Template is pretty much self-explanatory. All valid options are listed and using the drop-down ensures successful import. To replicate the Template, created for 09-3000 Tiling can be created in Excel. The Table shows the data that needs to be filled in the Excel file. You may choose to create any other template for practice. If you

Template Name	Template Type	Item Text	Item Description	Response Type	Response Required	List Answers	Non Conforming Answers
09-3000 Tiling	Quality	TILE MORTAR SET		Section			
09-3000 Tiling	Quality	Pre-Install Inspection		Checkboxes	TRUE	Backing is not in place | Tile backing board matches specifications | Mortar type matches specs | Studs/Furring properly anchored and braced	first answer
09-3000 Tiling	Quality	Tile Setter	Provide Full Name of lead Tile Setter	Text	TRUE		
09-3000 Tiling	Quality	TILE FINISHING		Section			
09-3000 Tiling	Quality	Grout Color Test	Prior to grouting all tiles, apply grout in a 2 tiles x 2 tiles area, clean and seal. Verify grout color matches specified color and provided sample	Pass, Fail, N/A	TRUE		
09-3000 Tiling	Quality	Finishing Inspection		Checkboxes	TRUE	Grout joints are uniform and smooth | Tile surface is clean and grout haze removed | Grout sealant applied	

choose to follow the example, save the file as CS469514_B360_FM_CKL_QAQC_09-3000 Tiling Import.xls Having a standard naming convention will help keep Templates organized and easy to find.

☐ 6. After saving the file in .xls format, return to the browser to continue where you left off. Click **Browse** and selected the customized Excel file from step 5. Click **Next** to import the Template. The import process is not immediate and Autodesk will notify you when the Template has been imported successfully or failed due to format mis-match. Click **Close** to continue.

☐ 7. An email will be sent with the status of the import whether it was successful or failed. Refer to the image showing an example of a failure message and items that failed and the reason for failure. Also, If the template shows up in the Template list then it is successful.

☐ 8. Once the Template has been successfully imported, **Edit** the Template or create a Checklist to test the imported Template.

Linking Assets and Checklists

Assets in BIM 360 allow teams to track a Project asset from design, ordering, construction, installation, commissioning and turnover. The whole topic of Asset is beyond the scope of this class; however, AKN has a great help section to walk users through the setup workflow https://autode.sk/35SgsdQ

Exercise 10: Linking Assets and Checklists

CHECKLIST: Pre-requisites for Linking Assets and Checklists

☐ Autodesk ID

☐ Asset module activated

Required Permissions:

   ☐ Project Admin or

   ☐ Create Assets

   ☐ Create Checklist Templates and Checklists

☐ Project Asset Categories

☐ Project Assets

☐ Relevant Checklists/Templates to link to.

☐ Compatible web browser http://autode.sk/3mgj5wD

Assuming you have appropriate permissions and the Asset module has been activated, in this exercise you will be importing a Commissioning Checklist Template related to Mechanical Air Handling Units and import an Excel file containing sample Assets. Once Assets have been imported, you will edit the Asset and link a Checklist with it (Step 7). The ideal method is to associate Checklist Template to Categories/Subcategories of Assets so the users can create relevant Checklists on the fly (Step 8). Another method to associate a Checklist to an Asset has been discussed in Step 4c of **Exercise: Create a Checklist from the template 09-3000 Tiling.** However, in that exercise, you will not be able to perform the action, unless Assets exists in the project, or after completing Steps 3-5 in this Exercise.

☐ 1. Using the module selector, click Field Management > CHECKLISTS > Templates.

☐ 2. Based on the what you learned in previous exercises:

   ☐ a. **Import** a Checklist Template from Field Classic **Template type** and **Issue Type** set to Commissioning. Filename: "CS469514_B360_FieldClassic_CKL_Comm_23-3600 PREFUNCTIONAL TEST - AIR HANDLING UNIT - MODEL VERIFICATION.xls"

2a Import Template from Classic BIM 360 Field
Template type *
| Commissioning ▼ |
Issue Type
| Commissioning ▼ |

   ☐ b. Associate an Asset to a Checklist: Return to the Template list and **Create checklist** from imported template. Process discussed in Step 7.
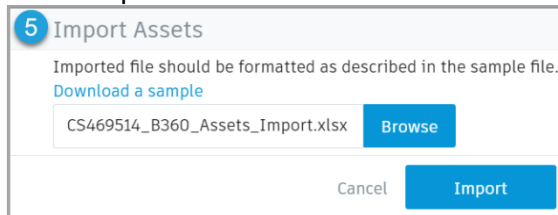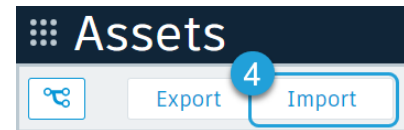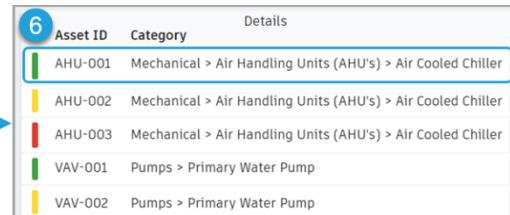
**2b** PREFUNCTIONAL TEST - AIR HANDLING UNIT - MODEL VERIFICATION   Commissioning   **Create checklist**

□ 3. Using the module selector, switch to Assets module

□ 4. Click **Import**

□ 5. In the next dialog click Browse and select "CS469514_B360_Assets_Import.xlsx" and click **Import.**

□ 6. Once imported click on AHU-001 to review the DETAILS.

□ 7. This method allows one to associate an Asset with a pre-created Checklist as was created in Step 2b. In the slide-out click

  □ a. **CHECKLISTS** then click on **Add reference**

  □ b. Select the Checklist that was created in step 2b. Remember you are associating a Checklist to an Asset in this workflow.
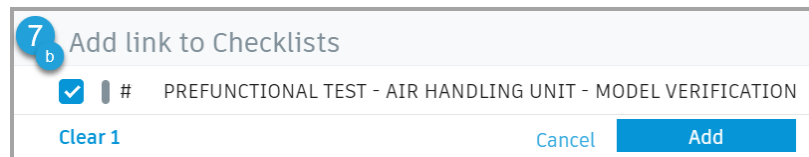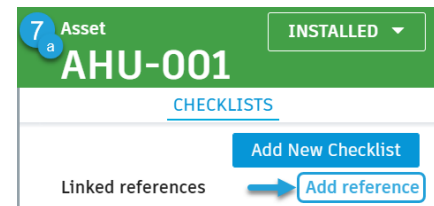
□ 8. This method allows one to associate Checklist Template(s) to Asset Categories so in field a team member is only shown relevant Checklist Templates to use. After completing Step 5, the Project will have Categories added in the Project Admin > Services > Assets settings. Your company may already have standard Categories preloaded as well.

  □ a. Switch to **Project Admin** using the module selector. Click **SERVICES** tab, then in the left navigation panel click **Assets**. Do not click on the Icon card.

  □ b. Under Assets click **Categories** tab.

  □ c. If Step 5 import was successful you should see at least two Categories, Mechanical and Pumps. Expand ▶**Mechanical** and click on **Air Handling Units (AHU's)**. This should open a slide-out for editing Category.

  □ d. Click on **CHECKLIST TEMPLATES** tab, then **Add reference**
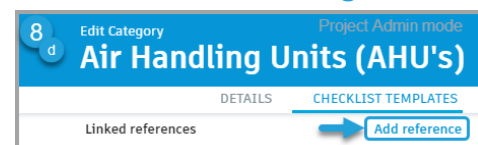
□ e. In the popup dialog select the Template PREFUNCTIONAL TEST - AIR HANDLING UNIT - MODEL VERIFICATION then click **Add**. Remember you are

associating a Checklist Template to a Category/Subcategory of Assets so a relevant Checklist can be generated as needed. This is more versatile than workflow in Step 7.
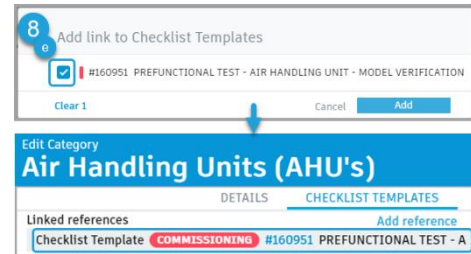
In the following steps you will be adding a Checklist using a Checklist Template that is relevant to the AHU-002 Asset based on the associated Subcategory of all

Air Handling Units (AHU's) you assigned in Steps 8a-e.

□ f. Using the module selector, switch to Assets module and click on **AHU-002** in the Assets list to review the DETAILS slide-out.

□ g. Click on **CHECKLISTS** tab, then click on **Add New Checklist**

□ h. In the popup dialog, there should be a Template(s) already available to generate a Checklist associate with this Asset. Select the Checklist Template that was associated with all in step 2b. Remember y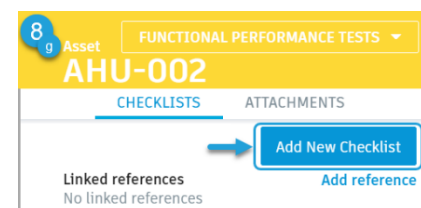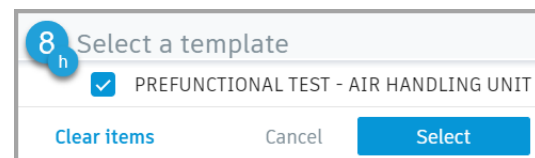ou are associating a Checklist to an Asset in this workflow. Unless Steps 8a-8e was successfully completed, the Checklist Template will not show up in the list.

□ i. In the next popup click **Create checklist**

□ j. In the Checklist editor, you will notice that the Asset AHU-002 has been associated with the Checklist.

Export Checklist Data

Exercise 11: Exporting Raw Data for turnover (only Account Admins with Executive Overview Access Level)

Currently (Nov. 2020), BIM 360 Field Management does not offer output to a comma delimited text file or Excel spreadsheet within the Checklist module. There are reports that can be exported as PDF, but these do not support the goal of utilizing the data in a database. However, there is a preview Data Connector available, that can create a raw comma delimited Data export. Autodesk has also provided a PowerBI template for analyzing the data and understand the key relationships between multiple data files. PowerBI template is available at http://autode.sk/35KrSjI

CHECKLIST: Pre-requisites for using Data Connector

☐ Autodesk ID

Required Permissions:

☐ Account Admin or

☐ **Access Level - Executive Overview**

Autodesk has a great step by step video at the Data Connector (Preview) AKN page. https://autode.sk/35OnobN

Based on the Prerequisites list, it is important to enable the Executive Overview Access Level for the Account Admin, otherwise the Data extraction tool is not available. The obvious sign is that the Insight module is not available in the Account Admin module selector.

The following data is extracted and can be downloaded as a .zip file containing a series of .csv files.
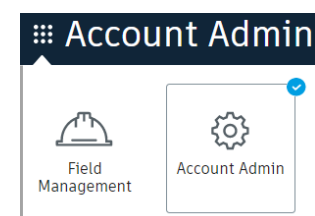
| Admin data	Project data
Activated services	Checklists
Business units	Cost
Companies	Issues
Projects	Locations
Users	Submittals
Roles	RFIs

☐ 1. Using the module selector ⊞ click Account Admin module.

☐ 2. Switch to MEMBERS list and click on your name in the list.

☐ 3. Click **EDIT**

□ 4. Check the box for Executive Overview. Wait a couple minutes, switch to another module and switch back to Account Admin. You can also invite other users to review the Executive overview. Refer to http://autode.sk/3jKfkgV for the process.

□ 5. Click on module selector and there should be Insight module available. Click on Insight module and then click on **DATA**.
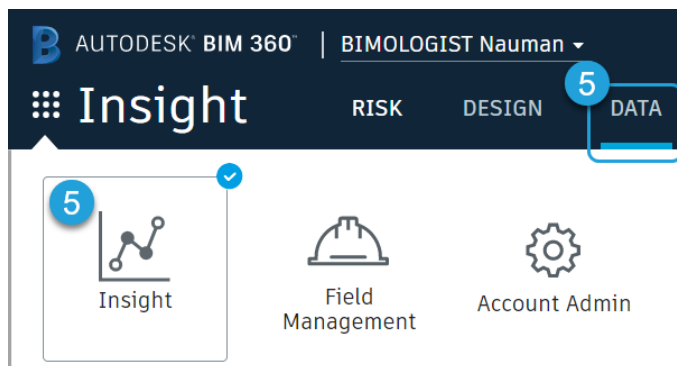
□ 6. Click **Run**. Depending on the amount of data in the account, the time will vary.

□ 7. Once the data has been generated, check for email notification by email or check under AVAILABLE EXTRACTIONS and click the download icon. Once downloaded, extract the data.

□ 8. If you downloaded the PowerBI template, you can point to the folder with the extracted files. Or if you are looking for raw Checklist data it is stored in *checklists_checklist*.csv* files.
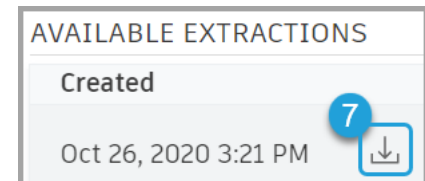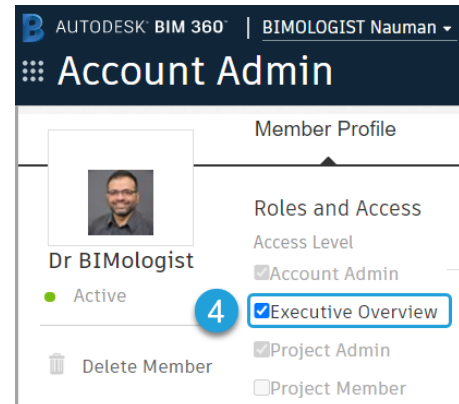
Resources and Further Learning

- BIM 360 Release Notes https://blogs.autodesk.com/bim360-release-notes/

- Workflow Guides https://bim360resources.autodesk.com/product-workflow-guides

- Autodesk Construction Blog https://constructionblog.autodesk.com/

- BIM 360 Resource Center at Autodesk Construction Blog
  https://bim360resources.autodesk.com/construction-blog

- Video Guide https://bim360resources.autodesk.com/proactive-quality-control/bim-360-ng-quality-checklists-workflow-video

- Quality Toolkit https://bim360resources.autodesk.com/proactive-quality-control/quality-control

- Safety Checklists http://constructioncloud.autodesk.com/rs/572-JSV-775/images/COVID-19_Construction_Safety_Checklist_Templates.zip

- Construction Safety Checklist Toolkit http://constructioncloud.autodesk.com/rs/572-JSV-775/images/Autodesk-Construction-Cloud-Safety-Checklist-Toolkit.zip

  Credits:
  Autodesk Knowledge Network (AKN)
  Autodesk BIM 360 Field Classic for Checklist Templates