

BELIMO AUTOMATION AG

BELIMO ZoneEase™ VAV AP

Step by step guide of Setup of projects in Cloud,
Testing & Commissioning

By Ray Lee

V1.3

Jan 2023

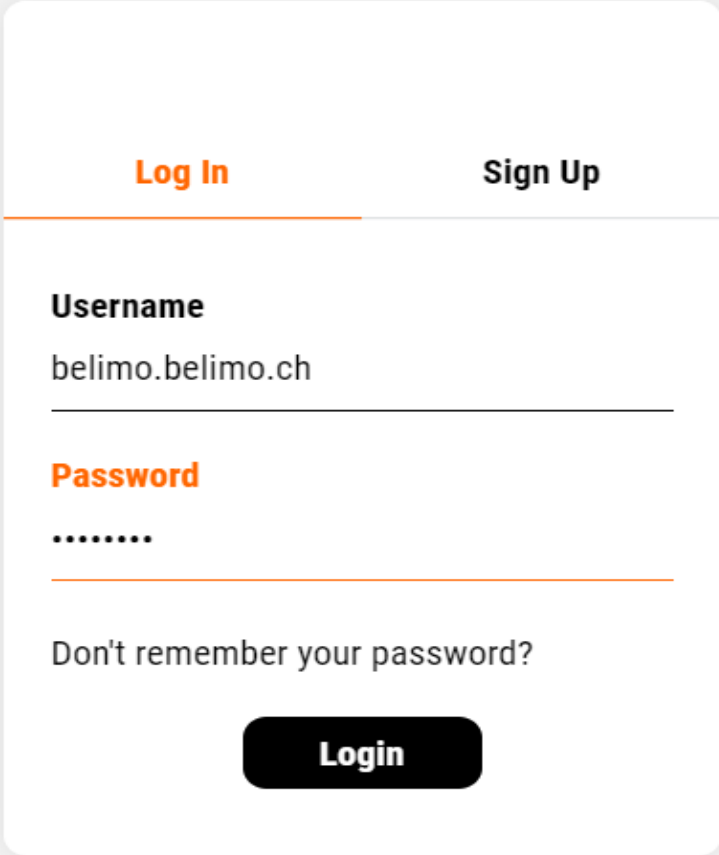
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BELIMO ZONEEASE™ PROJECT SETUP AND CONFIGURATION

In this document you will learn how to setup the ZoneEase™ VAV actuator for its operation.

First you will need to have a Belimo ZoneEase™ cloud account registered for the creation of your future projects. You can register an account for free at this link:

<https://zoneease.cloud.belimo.com>



The image shows a login and sign-up form for the Belimo ZoneEase™ cloud account. The form is white with rounded corners and is set against a light gray background. At the top, there are two tabs: "Log In" (highlighted with an orange underline) and "Sign Up". Below the tabs, there are two input fields: "Username" with the text "belimo.belimo.ch" and "Password" with a masked password ".....". Below the password field, there is a link "Don't remember your password?". At the bottom of the form, there is a black button with the text "Login" in white.

Click on Sign Up and fill in the required information. After you have successfully created your account, you will receive an email sent to you via the email address registered. Click on the link, and your account will be activated.

[+ Create Project](#)

[Show/hide 'Done' projects](#)

Project	State	Site	Details
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No projects available. Create a project with

[+ Create Project](#)

You can now login to your account and create, modify or delete projects. First you will need to create a project, and then click on "Details". You will see the "Project Settings", here you can choose to rename your project, add new members (cloud registered) into the project or delete the project if you are the admin.

Projects > Project Details

Project Details

Progress Belimo Test Site

[Project Settings](#)

[Create Report](#)

Last updated on 1/30/23, 11:41 AM

Calibration

0%

0 devices out of 0 done

Download

0%

0 devices out of 0 done

Commissioning

0%

0 devices out of 0 done

On your first project, you will need to download the excel sheet template for the configuration of the actuator. Click on "Edit Site Structure"

Site Structure and Devices

[Edit Site Structure](#)

Filter...

[Reset Filter](#)

Structure	Calibration	Download	Commissioning	Last Contact	Last Contact By	Serial Number
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Site Editor for Project: **Belimo Test Site**

Buttons: Save Draft, Publish Draft, Discard Draft, Import from Excel (circled), Export to Excel

Table:

Structure	Control	Global	
	V'min [m³/h] V'max Cooling [m³/h] V'max Heating [m³/h]	Application Number	Actions

Message box: No site structure configured. Start adding your site structure with **Add Building** or import it from file with **Import from Excel**

Click on "Import From File", then you will be prompt to another page where there is an option "Excel templates are available here". You may choose between **English version with Metric (SI) unit**, **English version with Imperial unit**, or **Chinese version with Metric(SI) unit**. After that you can fill in the excel template with the required configuration.

BELIMO Projects Support Downloads

Projects > Project Details > Site Model Edit

Site Model Edit

Site Templates (circled), Setup Guide, Mobile App

You can also find the excel template from "Download→Site Template" without creating a project. Alternatively, you can use the "Add Building" button to add in all the devices in your project.

Once you have completely filled the excel template with the required information, you can upload the file, and the click on "Publish Draft" to confirm the project information. The project will only appear in the BELIMO ZoneEase™ mobile app only after you have click on "Publish Draft". It is not possible to re-upload another excel template again after this action, so make sure the information you have provided is correct.

Site Editor for Project: Belimo Test Site

To add/remove VAV boxes or to edit the parameter setting of existing devices, you can again use the 'Edit Site Structure' button:

Site Editor for Project: Belimo Test Site

— Collapse All Deselect All + Add Building Show/Hide Parameters

Structure	Control			Global	Actions
	V'min [m³/h]	V'max Cooling [m³/h]	V'max Heating [m³/h]	Application Number	
Belimo Test Site					+ [trash] [refresh] [undo]
Ground					+ [trash] [refresh] [undo]
Meeting	Valid data range: 0 to 99,999				+ [trash] [refresh] [undo]
VAV-1	300	1,000		2, c	[trash]
Lobby					+ [trash] [refresh] [undo]
VAV-2	300	1,000		2, c	[trash]

If you have multiple boxes with the same setting you wish to apply, you can tick multiple units, and just change the parameter on any one of them, and it will apply to all the highlighted devices.

VAV-1	300	1,000		2, c	[trash]
Lobby	Valid data range: 0 to 99,999				+ [trash] [refresh] [undo]
VAV-2	250	1,000		2, c	[trash]
VAV-3	300	1,000		2, c	[trash]
VAV-4	300	1,000		2, c	[trash]
VAV-5	300	1,000		2, c	[trash]
Office					+ [trash] [refresh] [undo]
VAV-1	300	1,000		2, c	[trash]
Lobby					+ [trash] [refresh] [undo]
VAV-2	250	1,000		2, c	[trash]
VAV-3	250	1,000		2, c	[trash]
VAV-4	300	1,000		2, c	[trash]
VAV-5	250	1,000		2, c	[trash]

Power on Mode	Action done by actuator during power up
Occupancy Sensor	Enable if there is occupancy sensor connected to the setup
Room Unit Temp Unit	Display room temp in °C or °F
AI Sensor Configuration	Sensor type for AI input (Default: CO2)
Select Bus Protocol	To select BMS protocol used (ModBus or BACnet)
Baudrate	BACnet communication baudrate
Address	MAC / Network Address of the device
Instance Number	BACnet address/ Device ID of the device
Object Name	Name of the device when discovered in BACnet interface
Location	Location of device installed
Description	Description of device
BACnet Trunk No.	The BACnet trunk of device installed (For error check)
Parity (Modbus)	Parity check configuration to match with the master controller
BACnet Bus Watchdog Timeout [s]	Timeout for BACnet bus watchdog in seconds
ModBus Bus Watchdog Timeout [s]	Timeout for ModBus bus watchdog in seconds
Bus Fail Action	Actuator action in case of BMS communication failure

A comment box will appear with the valid values option once the column is highlighted. You should only key in values within the suggested range or options.

For VAV Box Manufacturer, there are expandable options for additional setting:

Z	AA	AB	AC	AD	AE	AF	AG
				Box Calibration			
				Values needed only if boxes not factory calibrated!			
28	105	106	29	11	12	103	
				Box Calibration			
CO2 Sensor max Limit	Damper Sync Position	Power On Mode	Occupancy Sensor	$\Delta P@V_{nom}$	V_{nom}	Rotation Direction	
	1	2	0			0	

Box Calibration	Description
$\Delta P@V_{nom}$	The measured ΔP Value at absolute maximum Flow of the box
V_{nom}	The absolute maximum flow of the box
Rotation Direction	Rotation direction to open

***All the columns in the excel sheet will be required to filled up with the relevant information.**

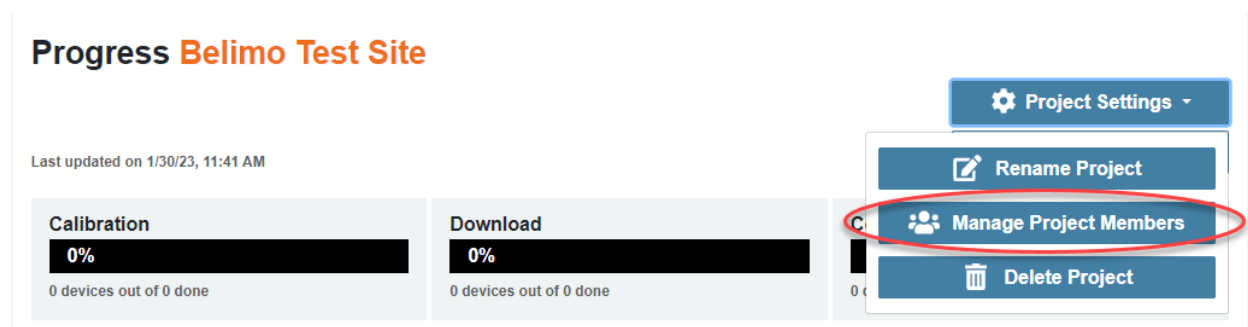
If any column that is irrelevant to your application (e.g. CO2 sensor limits), simply fill in a '0' as value. When you highlighted a specific column, additional information will be available in a comment box to aid user in providing the correct values. Once all the information has been filled, you can then upload this document to your cloud account.

After the excel template is filled in with all required information, you can then upload the template in the cloud website. If the template was filled in with invalid value, an error will prompt in cloud page after you have uploaded, and you will need to amend the template with valid values.

Site Editor for Project: **Belimo Test Site**



If you wish to save a copy of the excel template with the site configuration you can go back to "Site Configuration", and click on "Export to Excel".



You can add more members in a project. Simply go to the 'Project Settings → Manage Project Members', and you could add another member who has a Belimo ZoneEase™ cloud account so that they are able to monitor the progress as well. We recommend at least 2 admin level member in a project in the event of the absence of 1 of them, changes can still be made to the project.

Progress Belimo Test Site

 Project Settings ▾

 Create Report

Last updated on 1/30/23, 11:41 AM







Calibration <div style="background-color: black; color: white; text-align: center; padding: 2px;">0%</div> <p>0 devices out of 2 done 2 pending</p> <p style="text-align: right;">Show</p>	Download <div style="background-color: black; color: white; text-align: center; padding: 2px;">0%</div> <p>0 devices out of 2 done 2 pending</p> <p style="text-align: right;">Show</p>	Commissioning <div style="background-color: black; color: white; text-align: center; padding: 2px;">0%</div> <p>0 devices out of 2 done 2 pending</p> <p style="text-align: right;">Show</p>
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Site Structure and Devices

 Edit Site Structure

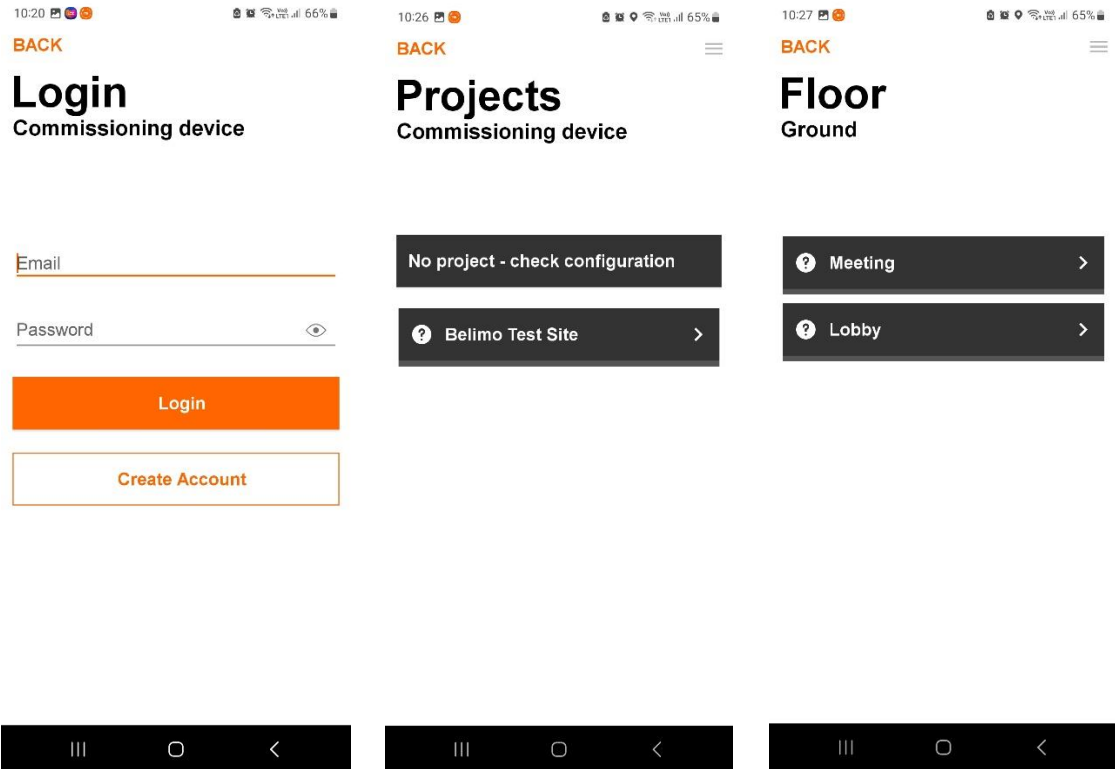
— Collapse All

Filter... ✕ Reset Filter

Structure	Calibration	Download	Commissioning	Last Contact	Last Contact By	Serial Number
☐  Belimo Test Site	?	?	?			
☐  Ground	?	?	?			
☐  Meeting	?	?	?			
 VAV-1	?	?	?			
☐  Lobby	?	?	?			
 VAV-2	?	?	?			

This screen will show after the “Project Detail 

“Belimo ZoneEase™” App can be downloaded from google play store, if your smartphone has NFC capability. Currently it is only compatible with Android smartphone.

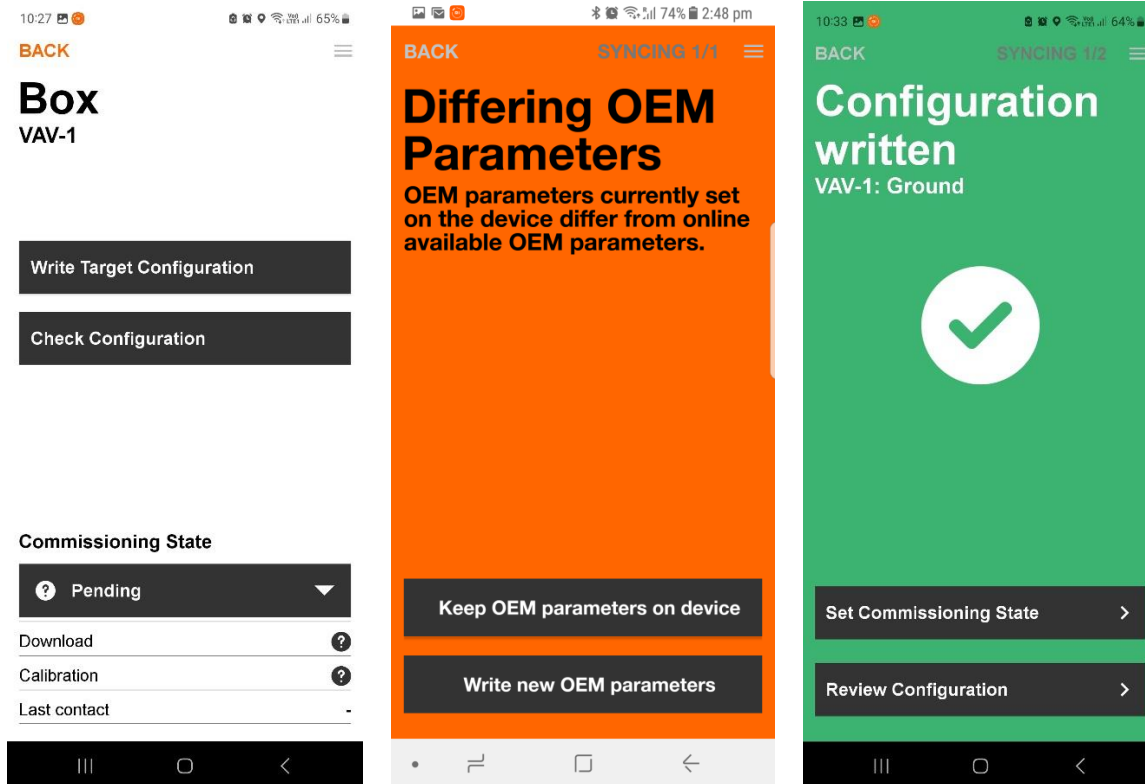


Picture 1: Shows the login screen. You need to key in the registered cloud email address and password to access your projects. The projects carry information from the template you have uploaded during project creation.

Picture 2: All the created projects and its progress will be shown. Tap on the project you would like to access to.

Picture 3: Tap on the unit that you wish to configure. After that, tap your smart phone as instructed on the screen onto the device (Room unit or Actuator) and hold until the progress bar is fully filled and the screen changes to the next screen. The actuator can be configured without powering on. 24VDC/AC power must be connected to both devices if you wish to perform this on the room unit.

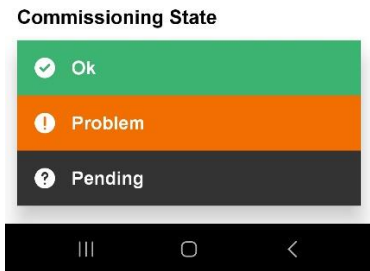
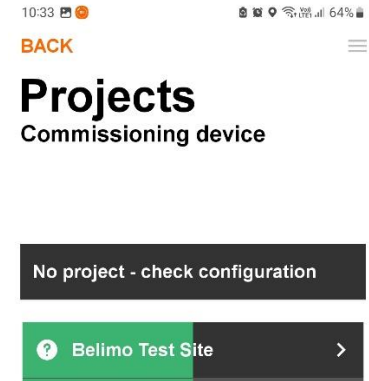
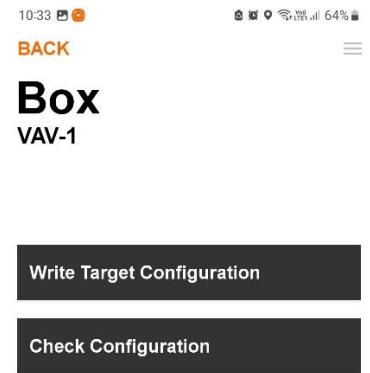




Picture 1: Options available for each unit. You may start to write the configuration into the actuator, or you can check the previous setting done on the actuator. You can also change the commissioning state of the actuator, if they have been successfully completed, or if you are facing any problem with the operation.

Picture 2: If during the writing of configuration, the information provided in the excel template does not match the calibration data of the box manufacturer, a warning will prompt, and you may opt to keep the setting from the box manufacturer or just overwrite them with your current settings.

Picture 3: After you have successfully configured the actuator, a green screen will appear, and you can update the commissioning state at this point, or check the configurations. The parameters in the app will correspond to all the provided information in the excel template. You can change any setting through the app at this time.



Picture 1: The options available for commissioning state are “Ok”, “Problem” or “Pending”.

Picture 2: Shows the progress of the project in the bar.

Progress Belimo Test Site

[Project Settings](#)

[Create Report](#)

Last updated on 1/31/23, 10:36 AM

<p>Calibration ✓</p> <div style="background-color: green; width: 100%; height: 10px; margin-bottom: 5px;"></div> <p>100%</p> <p>2 devices out of 2 done</p>	<p>Download ⚠</p> <div style="display: flex; align-items: center;"> <div style="background-color: green; width: 50%; height: 10px; margin-right: 5px;"></div> <div style="background-color: orange; width: 50%; height: 10px; margin-right: 5px;"></div> </div> <p>50%</p> <p>1 devices out of 2 done</p> <p>1 problems Show</p>	<p>Commissioning</p> <div style="display: flex; align-items: center;"> <div style="background-color: green; width: 50%; height: 10px; margin-right: 5px;"></div> <div style="background-color: black; width: 50%; height: 10px; margin-right: 5px;"></div> </div> <p>50%</p> <p>1 devices out of 2 done</p> <p>1 pending Show</p>
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Site Structure and Devices


[Edit Site Structure](#)

— Collapse All Filter... [Reset Filter](#)

Structure	Calibration	Download	Commissioning	Last Contact	Last Contact By	Serial Number
☐ 🏠 Belimo Test Site	✓	⚠	?			
☐ 🏠 Ground	✓	⚠	?			
☐ 🏠 Meeting	✓	✓	✓			
🏠 VAV-1	✓	✓	✓	1/31/23, 10:33 AM	Ray Lee	21743-20123-023-151
☐ 🏠 Lobby	✓	⚠	?			
🏠 VAV-2	✓	⚠	?	1/31/23, 10:36 AM	Ray Lee	

The progress will be reflected on the ZoneEase™ cloud page too. Clicking on the Serial Number of the respective actuator will bring you to the screen below:

Device Information: 21720-30034-023-000



Center location on map







Identification		Status UNKNOWN	
Project Name	TEST	Health	
Type	VAV-AP	Connection	5 minutes ago
Serial Number	21720-30034-023-000	Activated Features	

Location	
Coordinates	1.2896699905395508 / 103.85006713867188
Source	Based on IP address.
Location of device can be corrected with right click on map.	

Data Points

Data Points: 21720-30034-023-000

Search

Data Point	Value on Device	Action
Actual Airflow abs.	27.9	
Actual Airflow rel.	2.8	
Actual CO2 Value	70	
Actual Heat Demand		
Actual Room Temp	25.36	
Actual Δp		
Actuator Serial Number	21720-30034-023-000	

This page provides operational details of the VAV actuator at the instant the configuration was written or read from the device set using BELIMO ZoneEase™ Application.

Progress BELIMO LRD MY

Last updated on 11/23/21, 10:14 AM

[Project Settings](#)

[Create Report](#)

Calibration ✓ 100% 14 devices out of 14 done	Download ✓ 100% 14 devices out of 14 done	Commissioning ✓ 100% 14 devices out of 14 done
------------------------------------------------------------------	---------------------------------------------------------------	--------------------------------------------------------------------

Site Structure and Devices

[Edit Site Structure](#)

— Collapse All

Filter... [Reset Filter](#)

Once you have finished the Testing & Commissioning process, you can simply create a report from the page. The report will be saved as .pdf format and show the details of all boxes, such as following:

BELIMO ZoneEase™ VAV

Commissioning Report

BELIMO LRD MY

2/16/22 1:54 PM - Ray Lee

Structure	Calibration	Download	Commissioning	Last contact	Last contact by	Serial Number
BELIMO LRD MY	✓	✓	✓			
L1	✓	✓	✓			
Lobby	✓	✓	✓			
ZE-L1-1	✓	✓	✓	2021-11-22 09:29	Ray Lee	21951-10013-023-139
Warehouse	✓	✓	✓			
ZE-L1-2	✓	✓	✓	2021-11-22 09:28	Ray Lee	21951-10004-023-139
ZE-L1-3	✓	✓	✓	2021-11-22 09:28	Ray Lee	21951-10003-023-139
L2	✓	✓	✓			
CGM Office	✓	✓	✓			
ZE-L2-1	✓	✓	✓	2021-10-12 14:37	Ray Lee	21951-10014-023-151
ZE-L2-2	✓	✓	✓	2021-10-12 14:35	Ray Lee	21951-10006-023-139
ZE-L2-3	✓	✓	✓	2021-10-12 14:33	Ray Lee	21951-10012-023-139
ZE-L2-4	✓	✓	✓	2021-10-12 14:31	Ray Lee	21951-10006-023-151
L3	✓	✓	✓			
Conference Room	✓	✓	✓			
ZE-L3-1	✓	✓	✓	2021-11-23 10:14	Phang Khai Siang	21951-10003-023-151
ZE-L3-2	✓	✓	✓	2021-10-12 14:26	Ray Lee	21951-10009-023-139
ZE-L3-3	✓	✓	✓	2021-10-12 14:23	Ray Lee	21951-10004-023-151
L4	✓	✓	✓			
Office	✓	✓	✓			
ZE-L4-1	✓	✓	✓	2021-10-12 14:14	Ray Lee	21951-10011-023-139
ZE-L4-2	✓	✓	✓	2021-10-12 14:12	Ray Lee	21951-10016-023-139

This report was generated automatically, please do not reply. If you have any questions, please contact your regional sales representative or visit www.belimo.com.

Page 1 of 2



All member in the project will be able to download the same report for their reference. Now, your ZoneEase™ VAV is operating normally.

Structure	Calibration	Download	Commissioning
[-] 🏠 Heida's Palace	?	?	?
[-] 🏠 3rd Floor	?	?	?
[-] 🏠 Living Room	?	?	?
[-] 🏠 E.A.1	✓	?	? ✖

Sometimes you will see an orange cross icon, this is "Out of Sync" warning. This icon will be displayed if manual modifications have been done on an actuator with the ZE App.

If there are no further changes to be done in the project, it can be marked as done at the 'Project Settings':

The image shows two parts of the application interface. On the left, a 'Project Settings' dropdown menu is open, listing options: 'Rename Project', 'Manage Project Members', 'Mark Project as Done' (highlighted with a red oval), and 'Delete Project'. On the right, the 'Commissioning' status panel shows a progress bar at 0%, with text indicating '0 devices out of 2 done' and '2 pending'. A 'Show' button is present. Below this, an 'Edit Site Structure' button is shown with a red prohibition sign over it, indicating that editing is disabled.

Projects

Project Overview

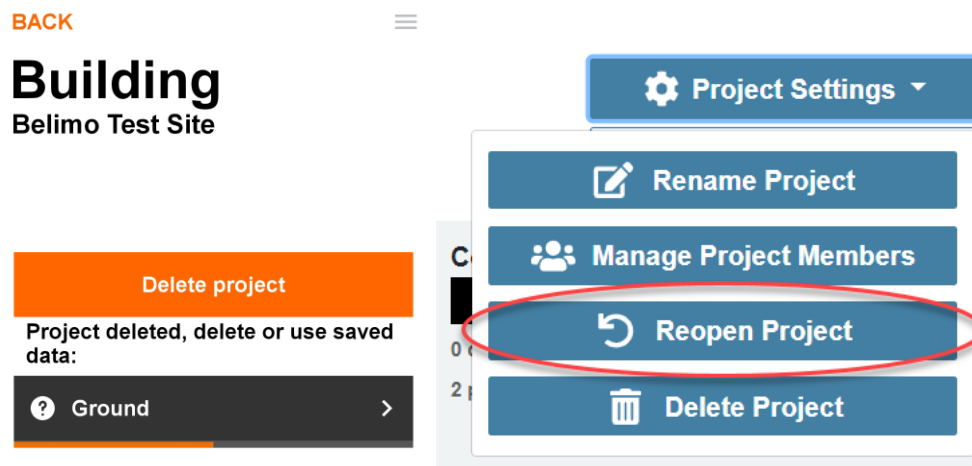
[+ Create Project](#)

[Show/hide 'Done' projects](#)

Project	State	Site	Details
Belimo Test Site	Done	?	☰

Once the project is marked as done, project members can no longer edit site structure to add/remove boxes information from the project. From the BELIMO ZoneEase™ Application

there will be a 'Delete Project' notification for the project as well, in case you do not need to access the devices anymore.



If you wish to configure the devices of the project again, you can open the project again in "Project Settings".