

## How to create a trigger and action rule

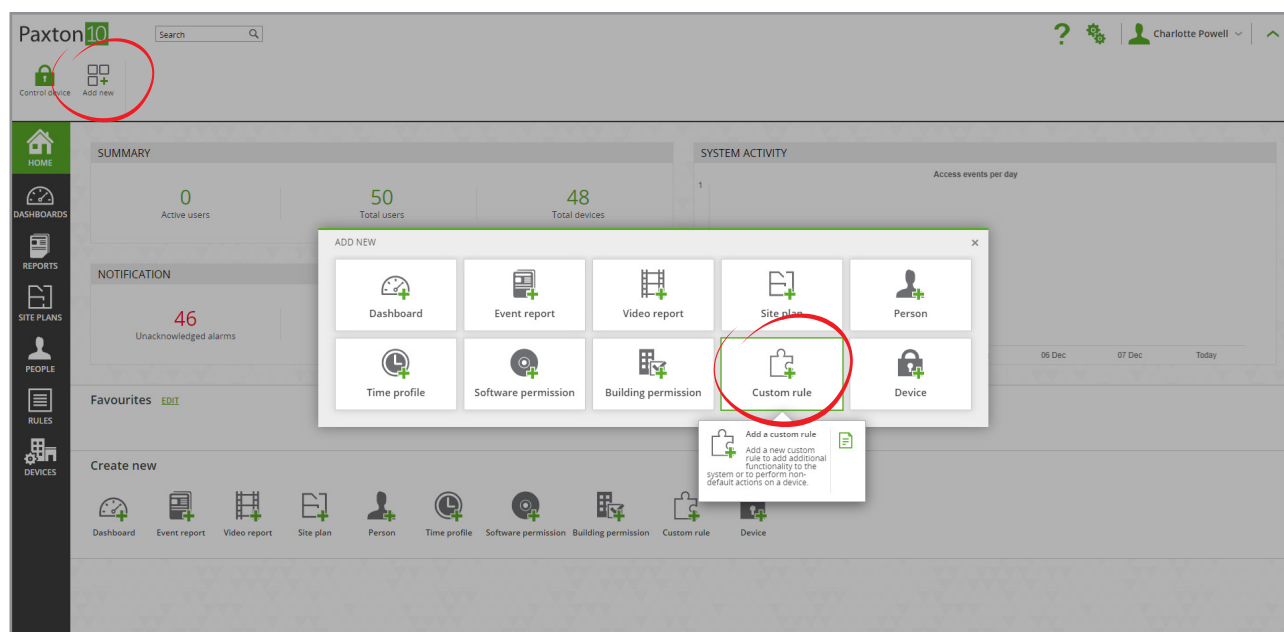
### Overview

Trigger and Action rules are a way of creating custom and unique functionality in Paxton10. Rules can be created to perform simple tasks, like turning the lights off when a light sensor is high, but equally rules can be created to accomplish complex actions or control unique appliances, such as controlling the access and use of a lift.

This document focuses on the process to follow to create Trigger and Action rules. To get more information on a particular trigger/constraint/action, hover over each possible menu option and various sections to display a tooltip with useful instructions and tips.

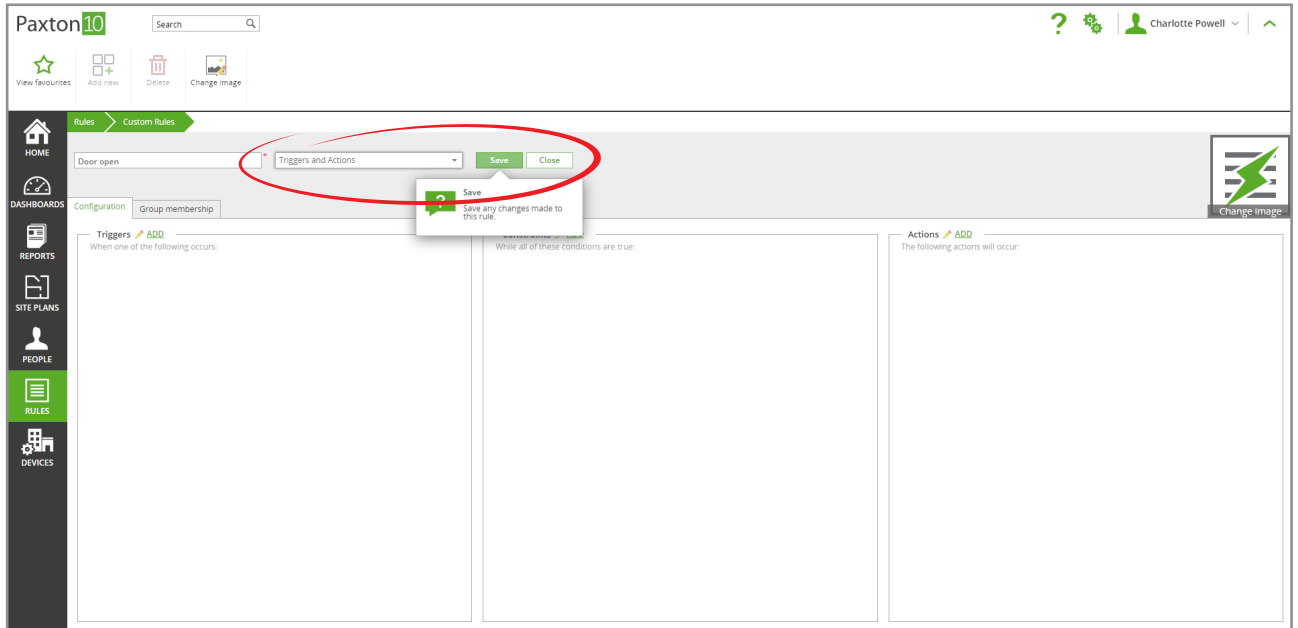
### Create a trigger and action rule

1. From the ribbon, select 'Add new'
2. Select 'Custom rule'



3. Give the rule a name

4. Select 'Triggers and Actions' as the rule type
5. Click 'Save'

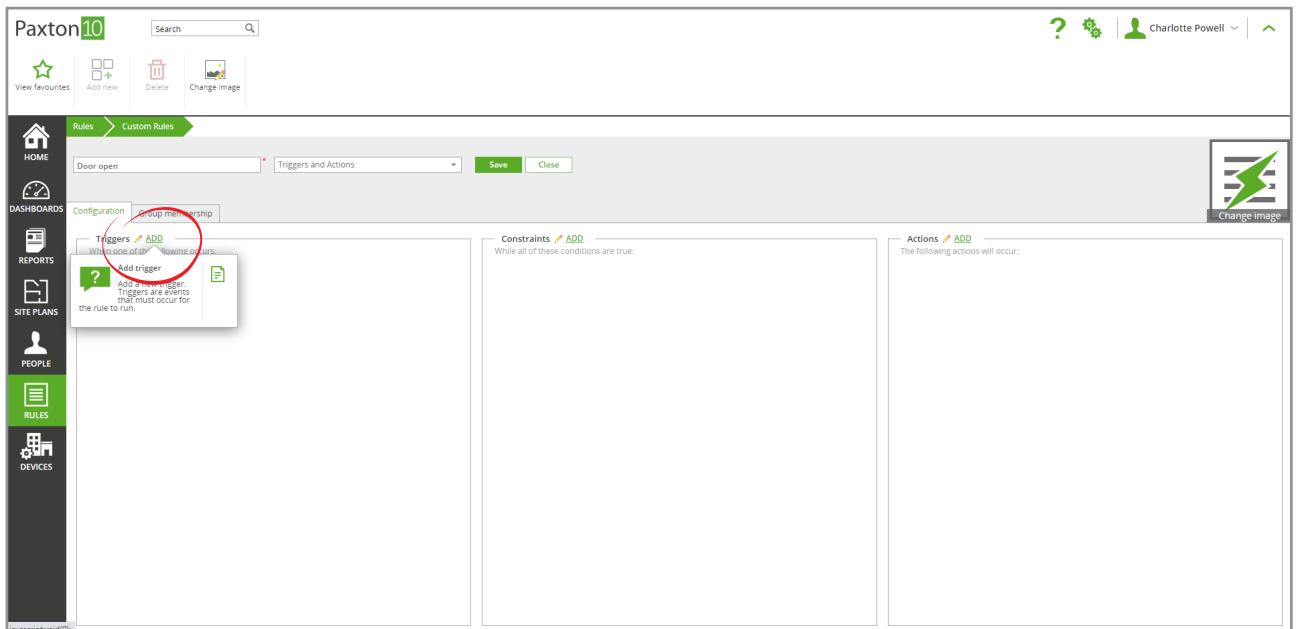


## Add triggers to a rule

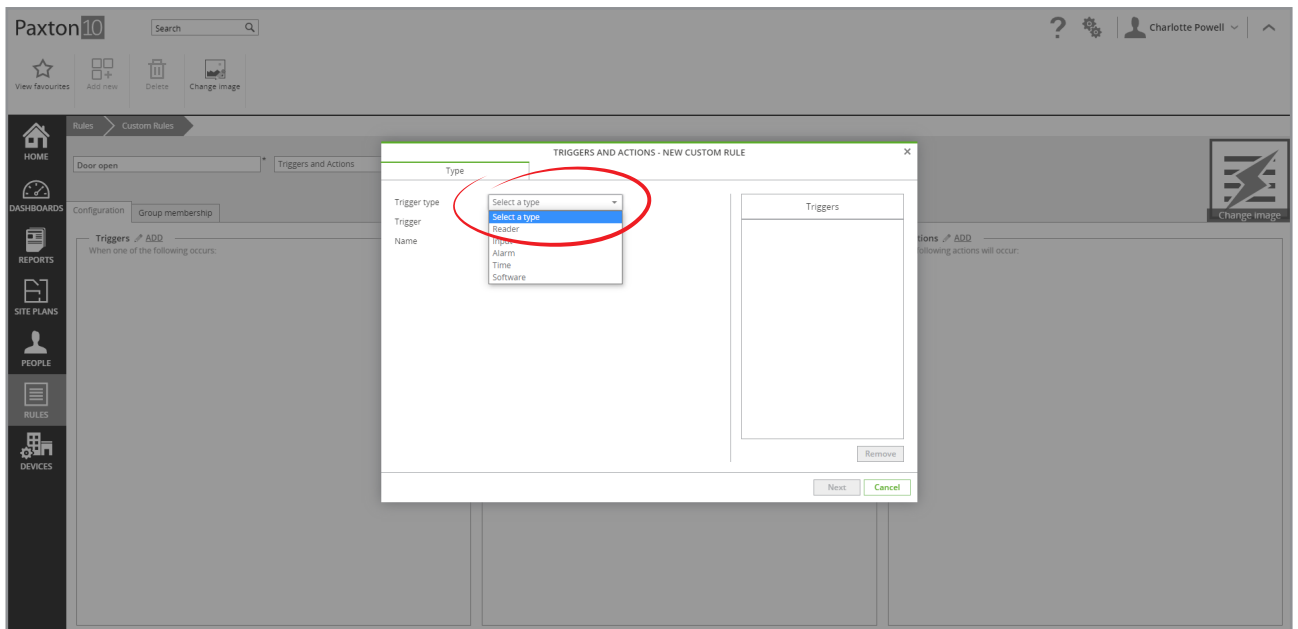
Triggers are the events that cause the rule to run. All rules must have at least one trigger.

While in a Trigger and Action rule:

1. Click 'Add' next to the 'Triggers' box

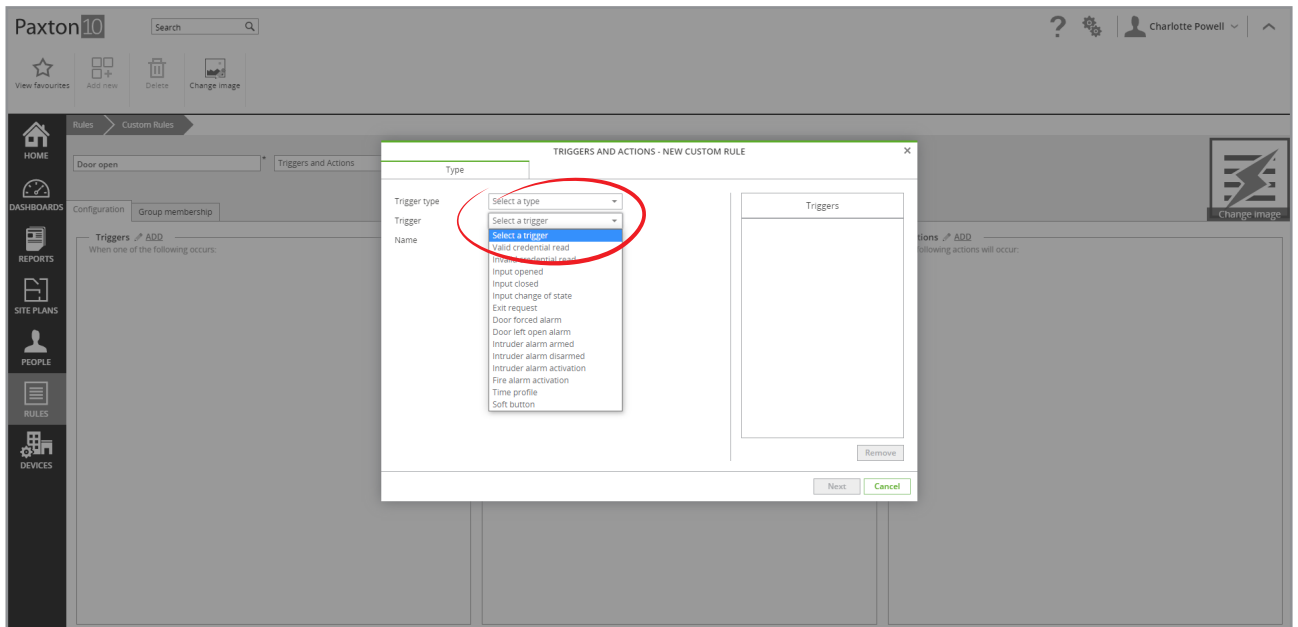


2. Expand the drop-down next to Trigger type and select the type of trigger you want

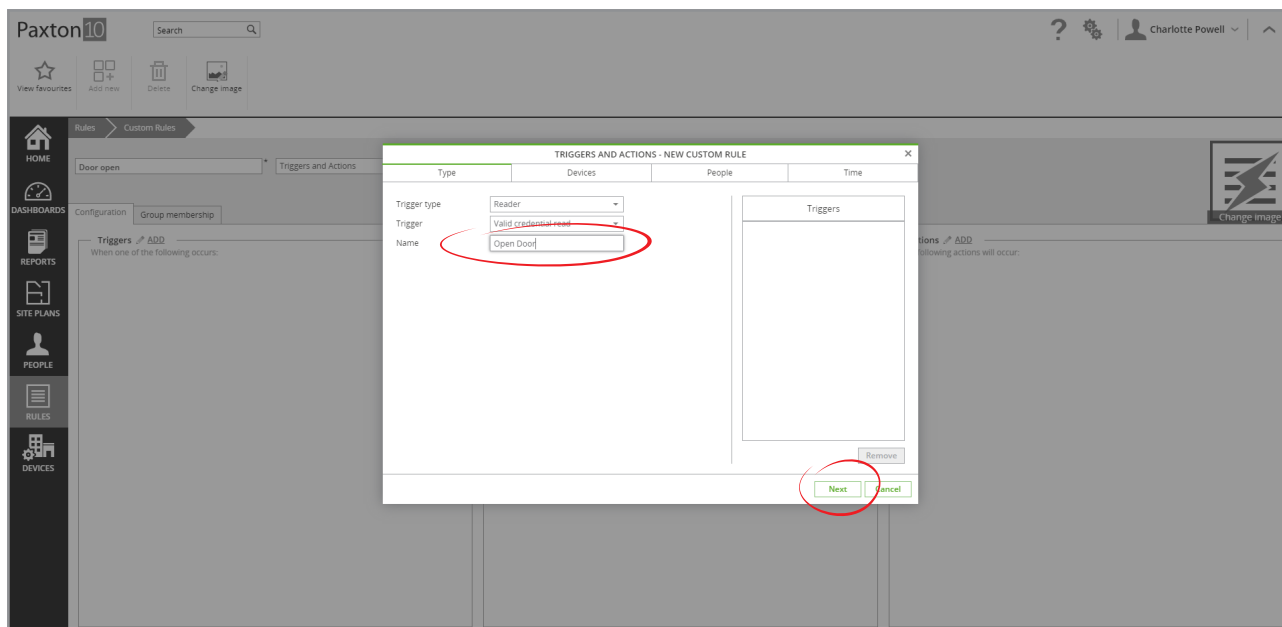


3. Expand the drop-down next to Trigger and select what the trigger to the rule should be

Note: The list of triggers displayed will depend on the Trigger type you selected.

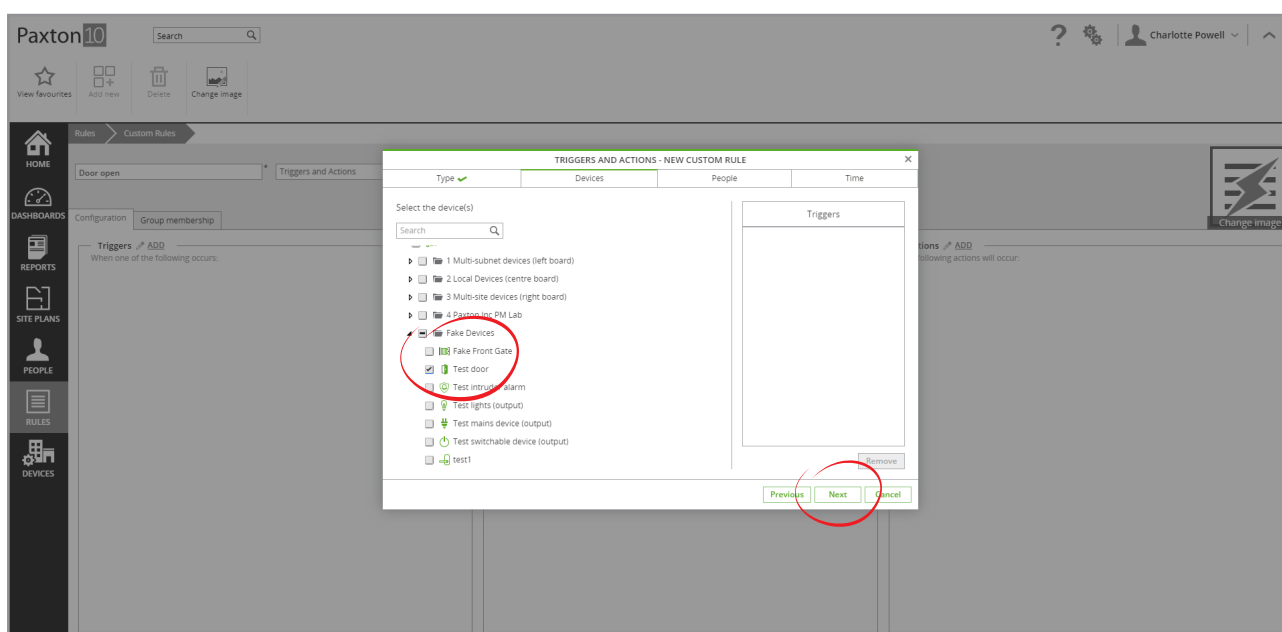


4. Give the Trigger a name and click 'Next'



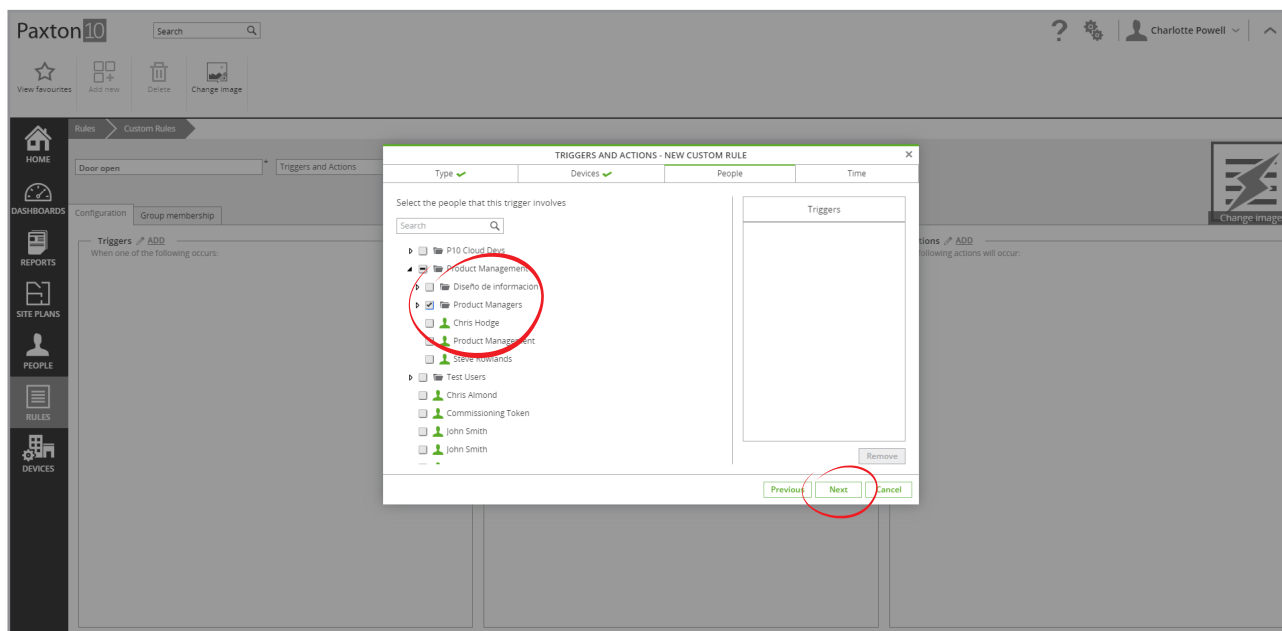
- Depending on the trigger chosen, configuration will be different. Select the devices and people that can cause the trigger (where required), and the time that the trigger can happen. Click **'Next'** once each section is complete. The list of sections to complete are displayed as tabs along the top

## Devices

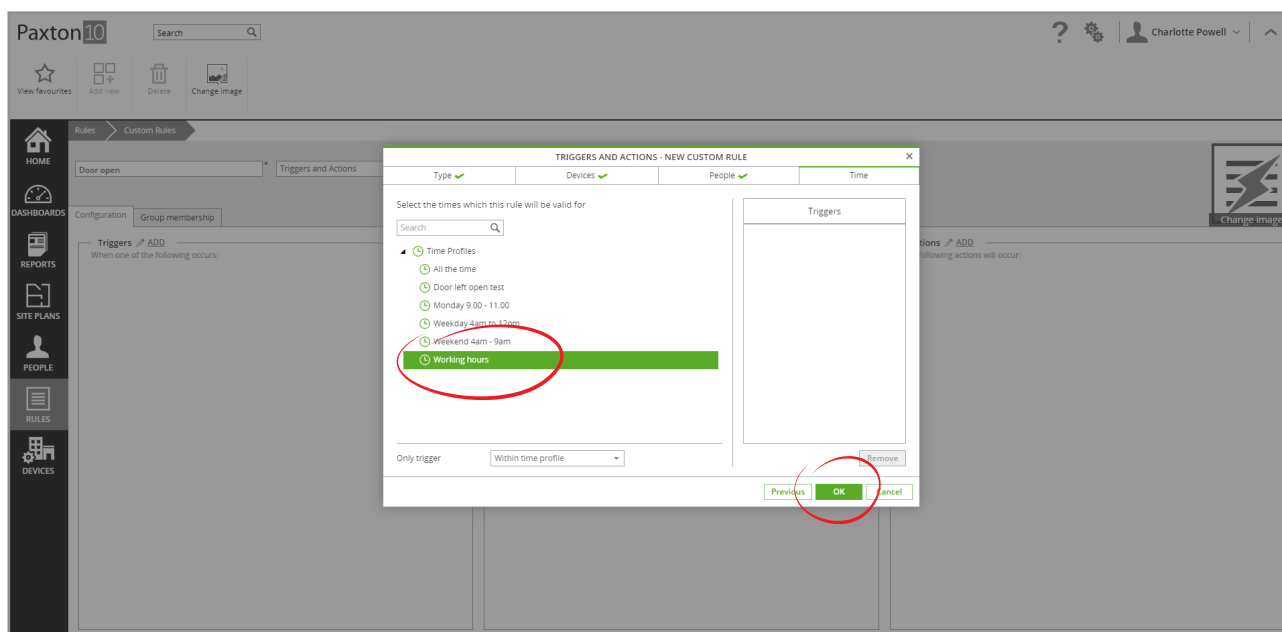




## People



## Time



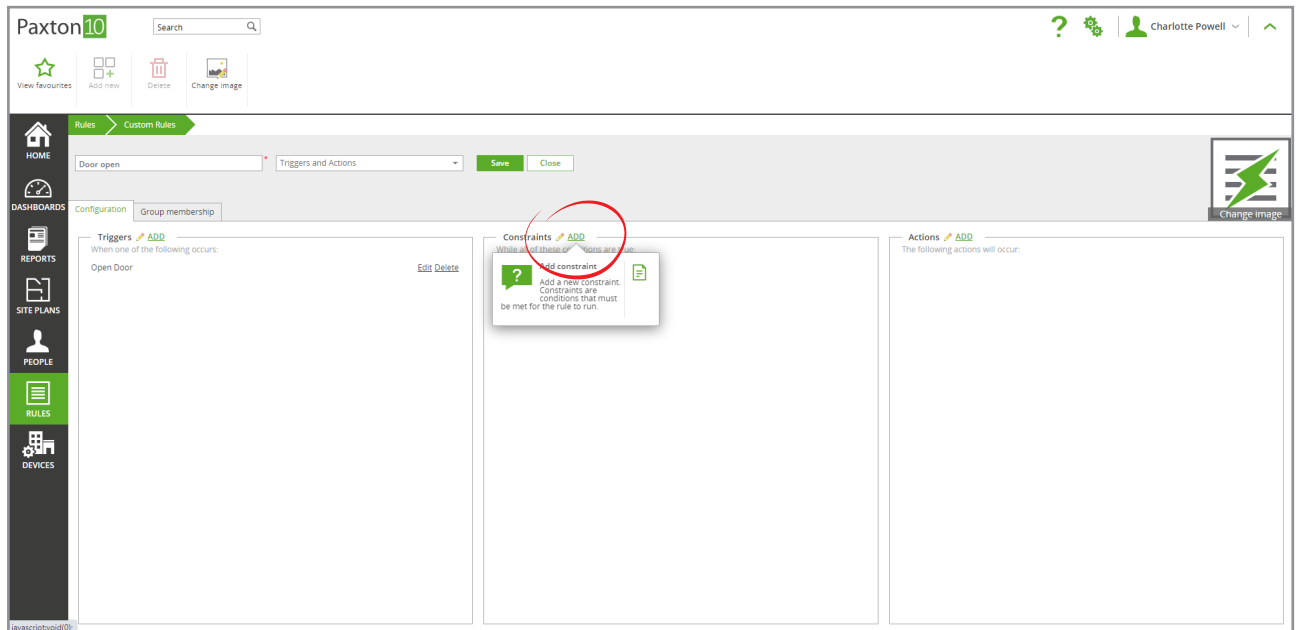
6. Once all sections have been completed (all tabs along the top will contain a tick), click 'OK'
7. Repeat the above steps to add additional triggers to the rule

## Add constraints to a rule

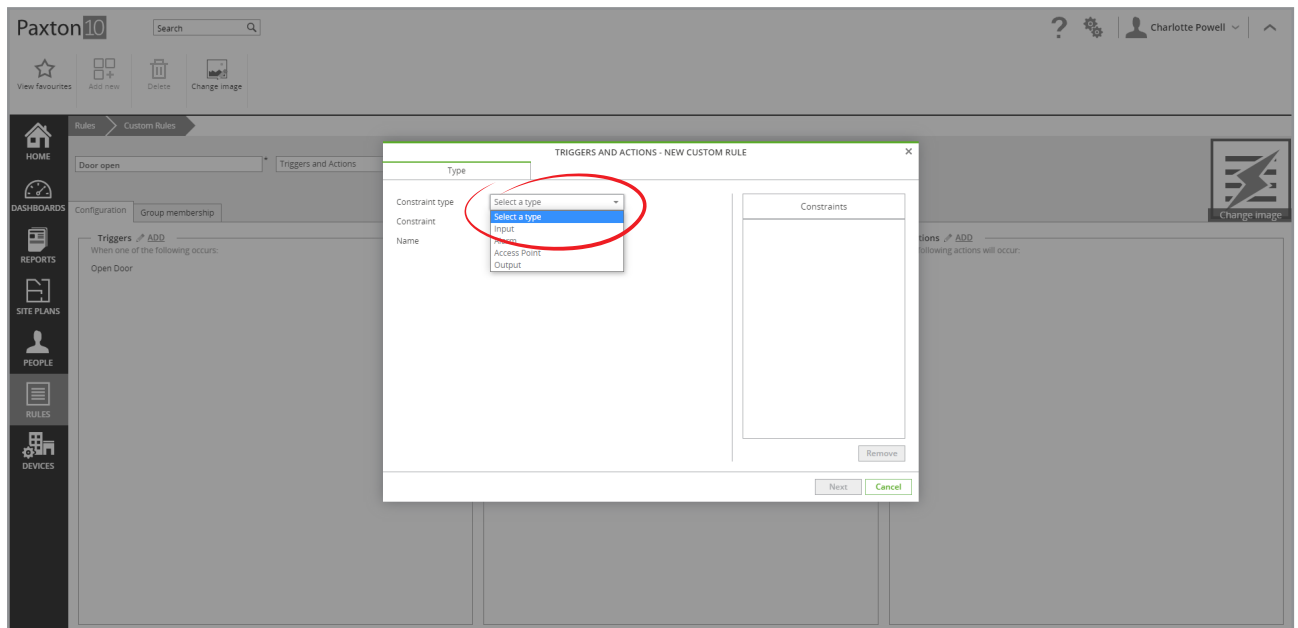
Constraints are the conditions that must be met for a rule to run. A rule will not run unless all constraints are met.

While in a Trigger and Action rule:

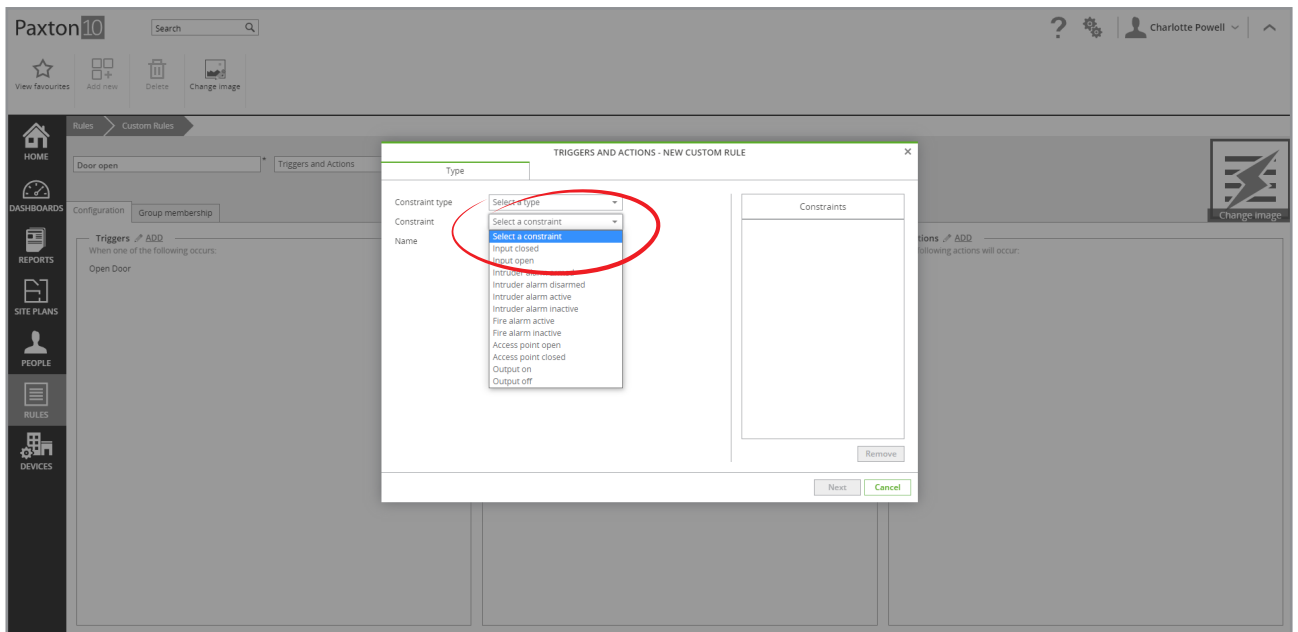
1. Click 'Add' next to the Constraints box



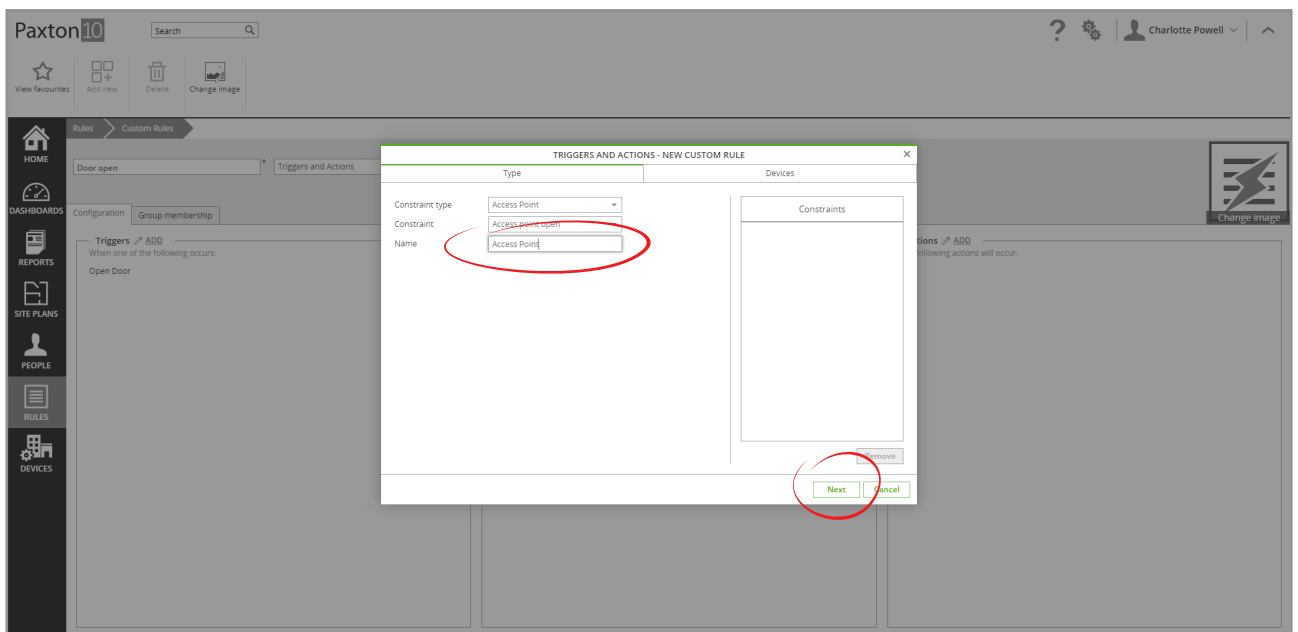
2. Expand the drop-down next to Constraint type and select the type of constraint for the rule to be constrained by



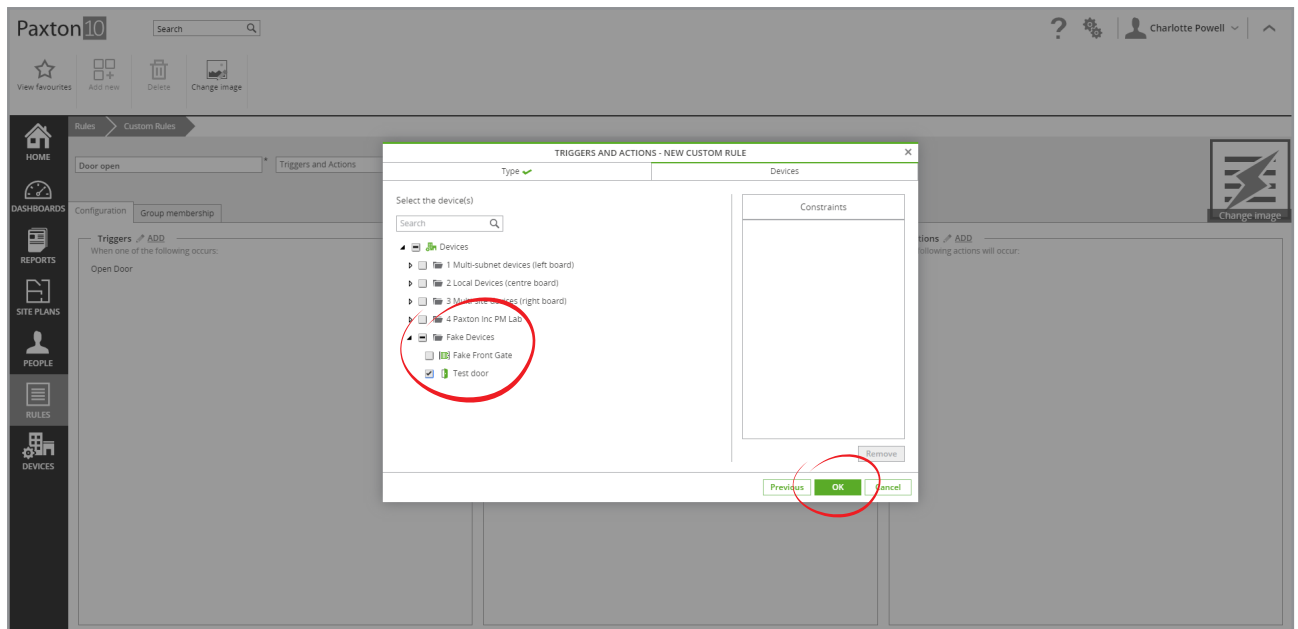
3. Expand the drop-down next to Constraint and select the condition that must be met for the rule's action(s) to occur. The list of constraints displayed will depend on the Constraint type you selected



4. Give the Constraint a name and click 'Next'



5. Select the devices that the Constraint applies to, or in other words, the devices that must be in the state of the constraint for the rule's action(s) to occur
6. Click 'OK'



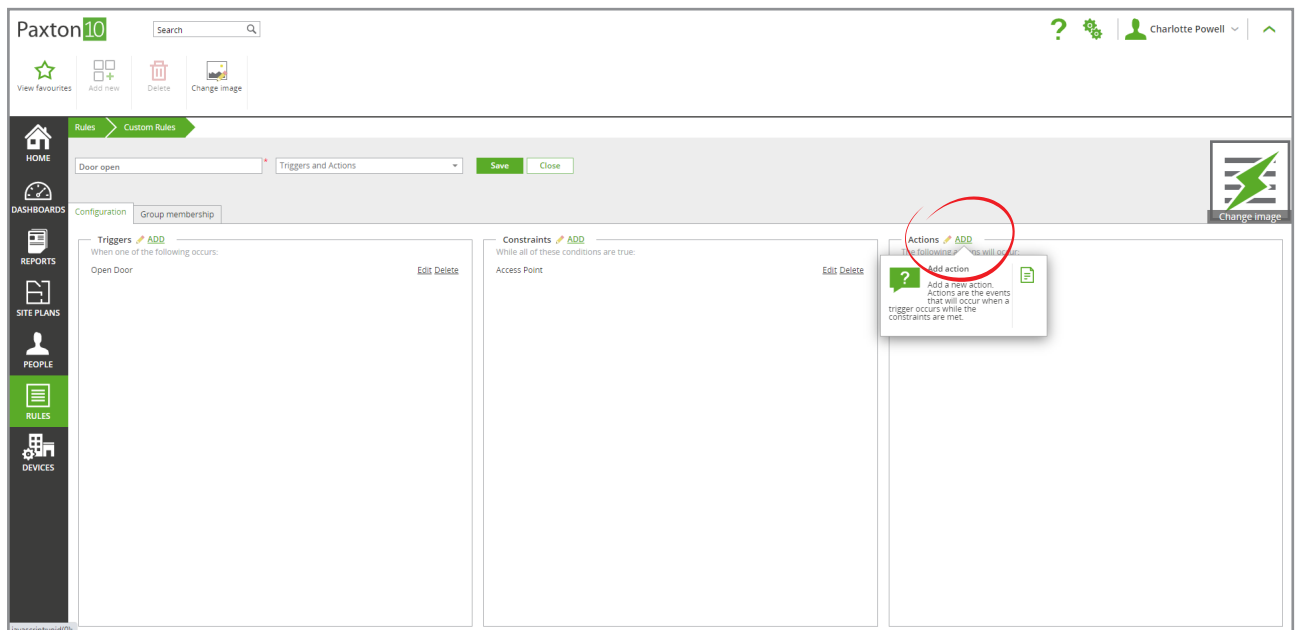
7. Repeat the above steps to add additional constraints to the rule

## Add actions to a rule

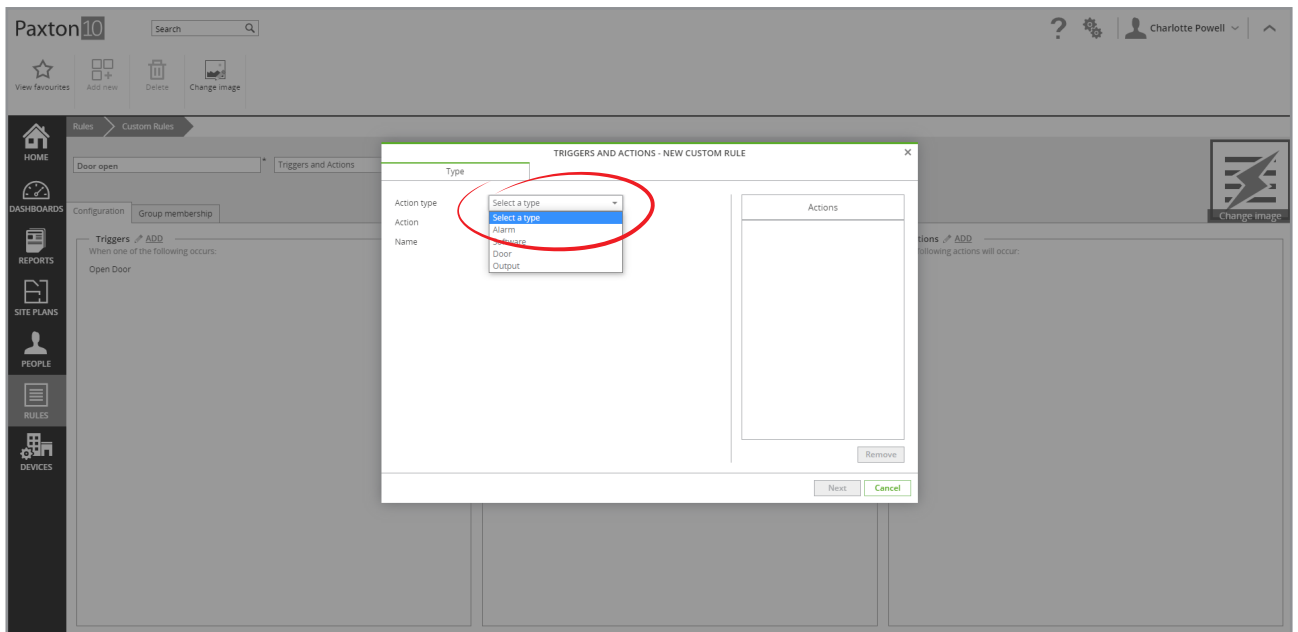
Actions are what happens when a trigger occurs while all constraints are met.

While in a Trigger and Action rule:

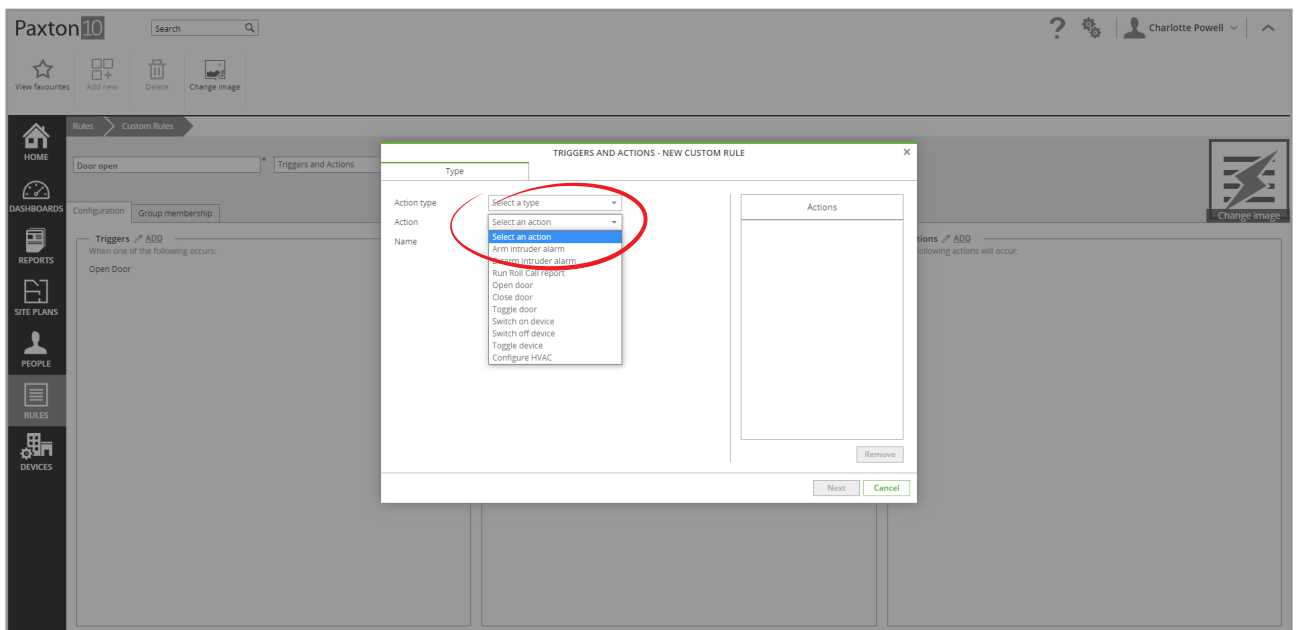
1. Click 'Add' next to the Actions box



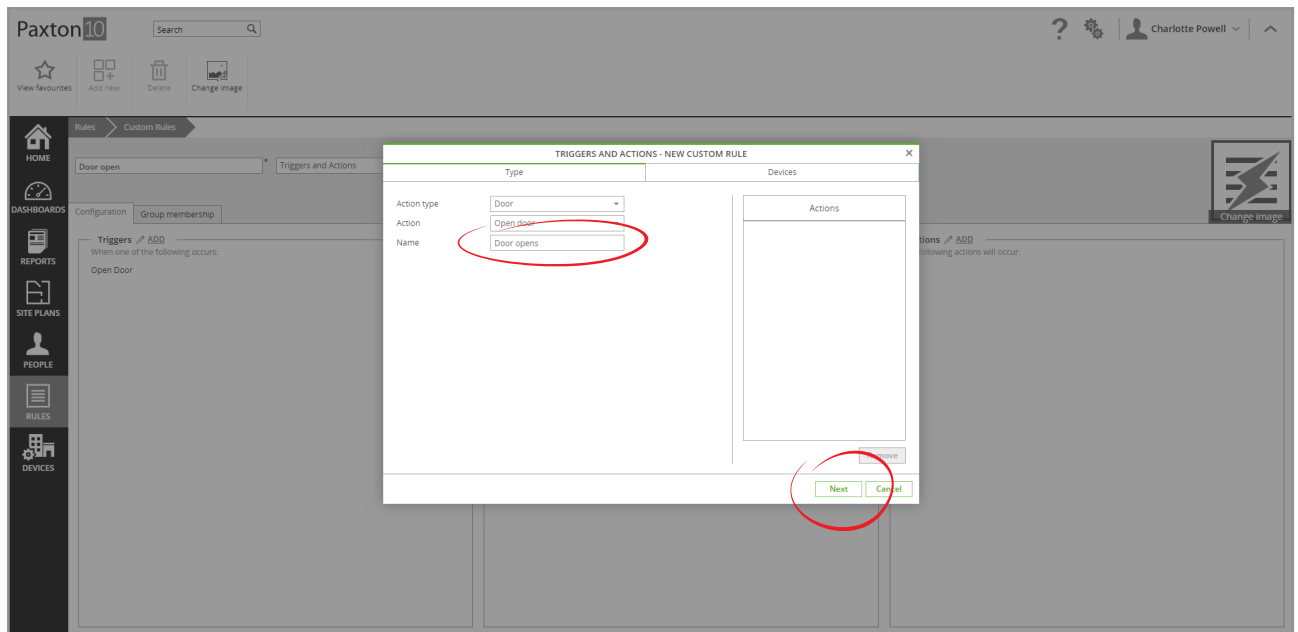
2. Expand the drop-down next to Action type and select the type of action to occur or the device type to control



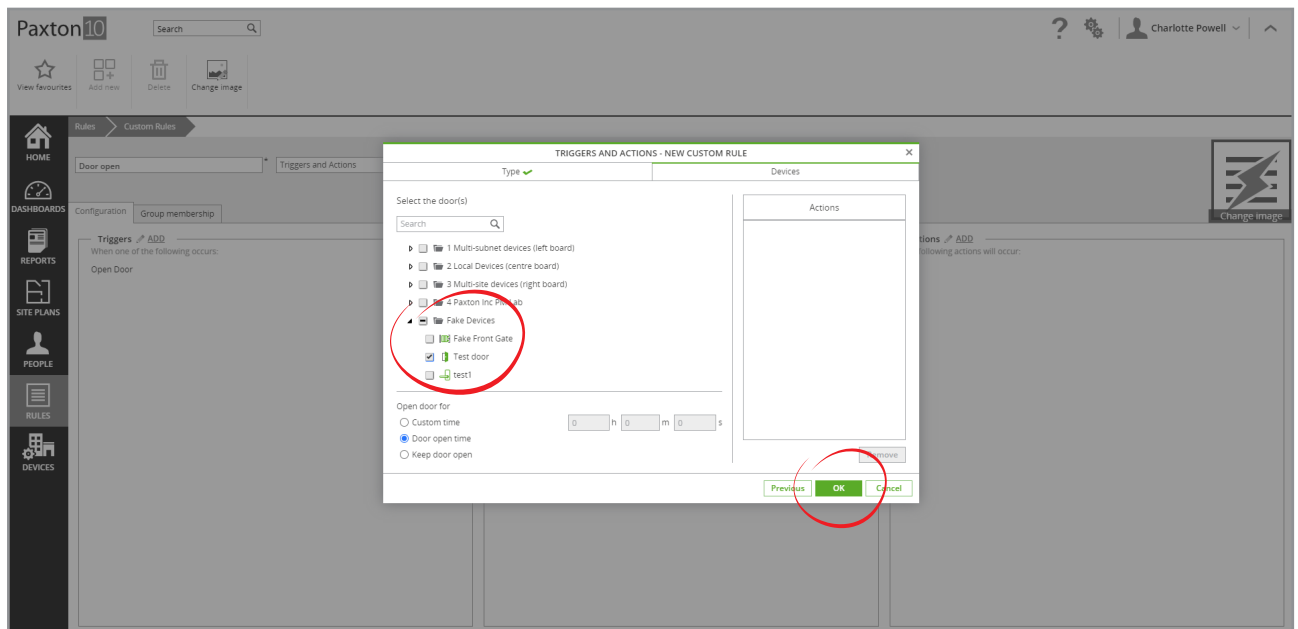
- Expand the drop-down next to Action and select an action. The list of actions displayed will depend on the Action type you selected



- Give the Action a name and click 'Next'



5. Select the devices to action and any additional configuration required (depending on the action you selected)
6. Click 'OK'



7. Repeat the above steps to add additional actions to their rule

# Examples

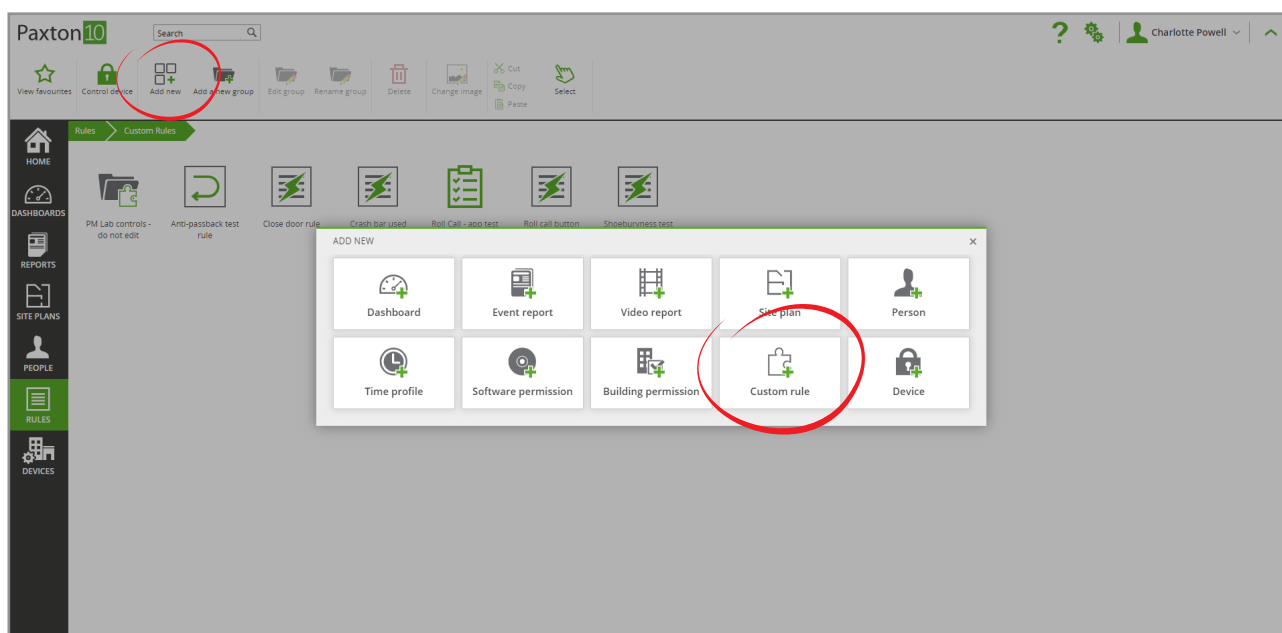
## Switch lights on/off

This is a simple example of using a switch to turn on and off a light.

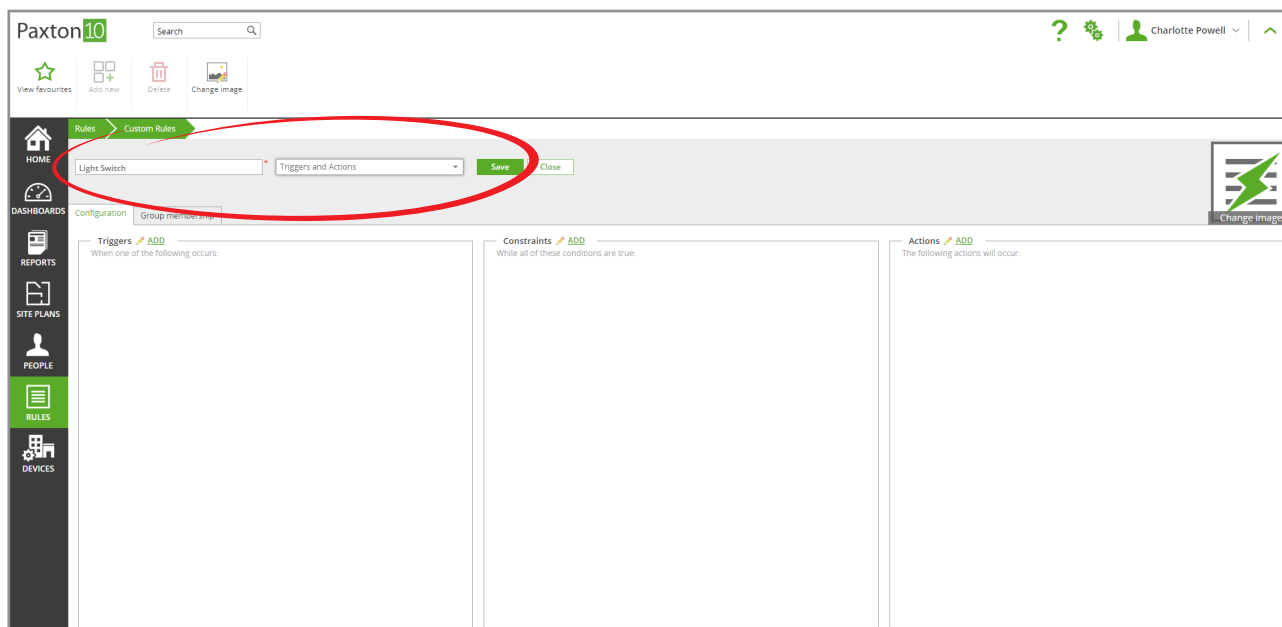
Pre-condition: an input device exists called 'Light switch', and an output device exists called 'Kitchen lights'.

### Step 1 – Create a new rule

1. From the ribbon, select 'Add new'
2. Select 'Custom rule'

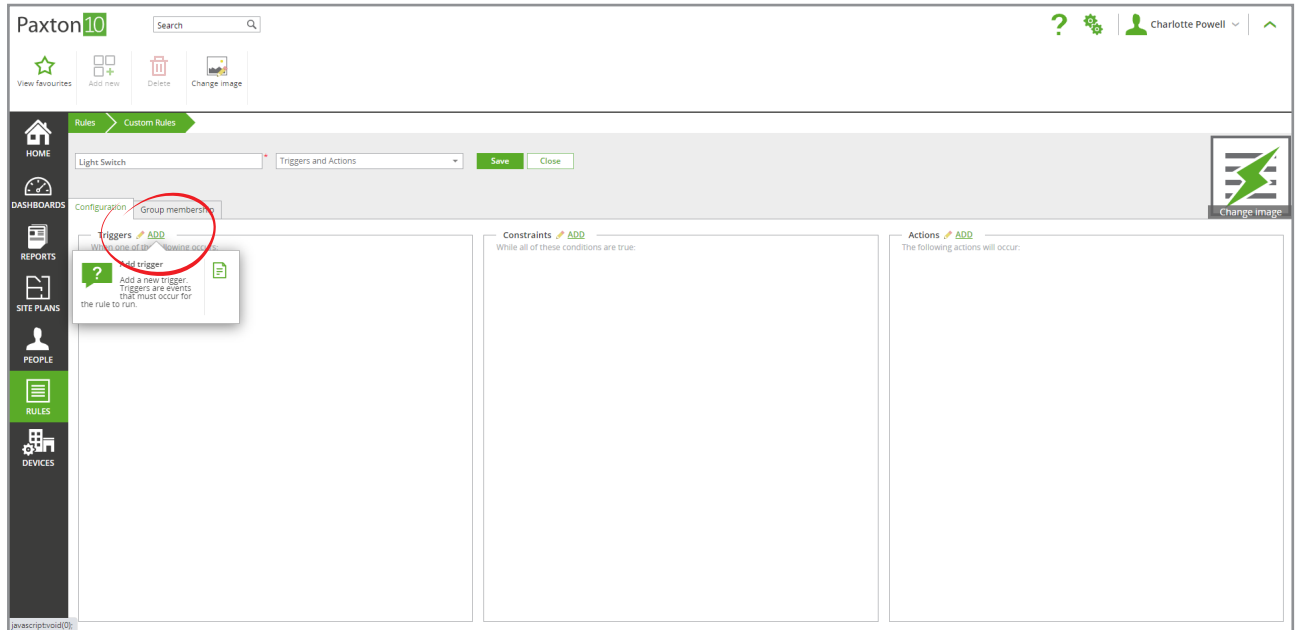


3. Enter a name – 'Light switch' in this case, and choose 'Triggers and Actions' from the drop-down list

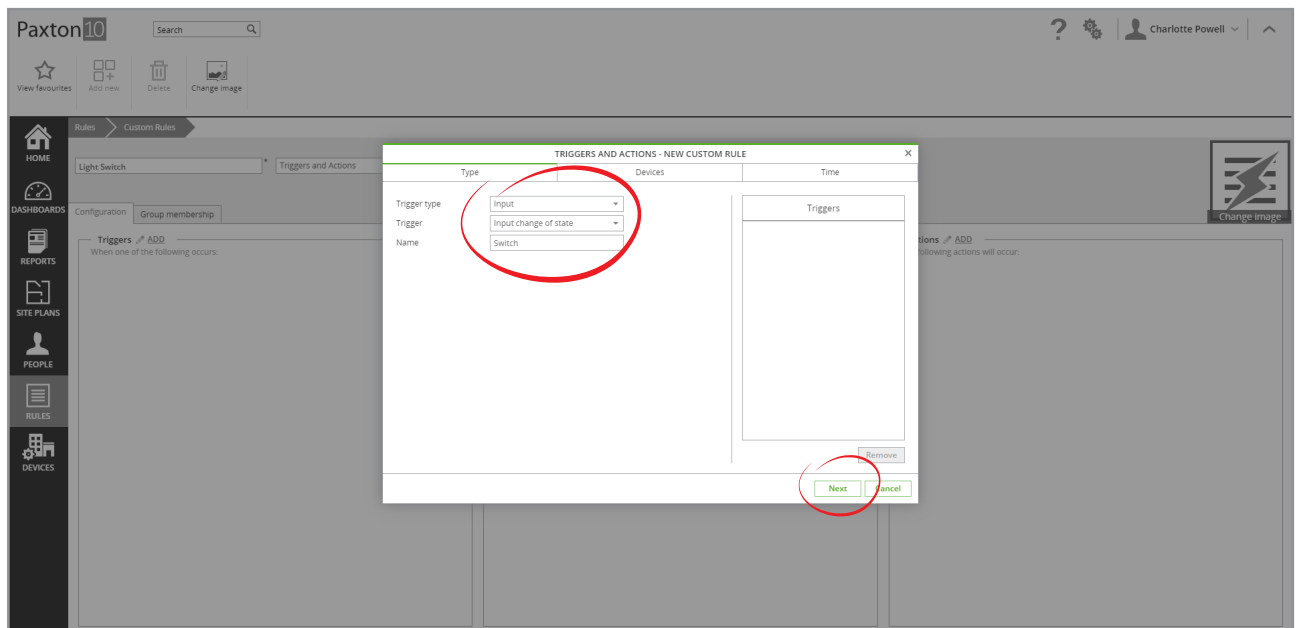


## Step 2 – Add the trigger

1. Click 'Add' by the Trigger box

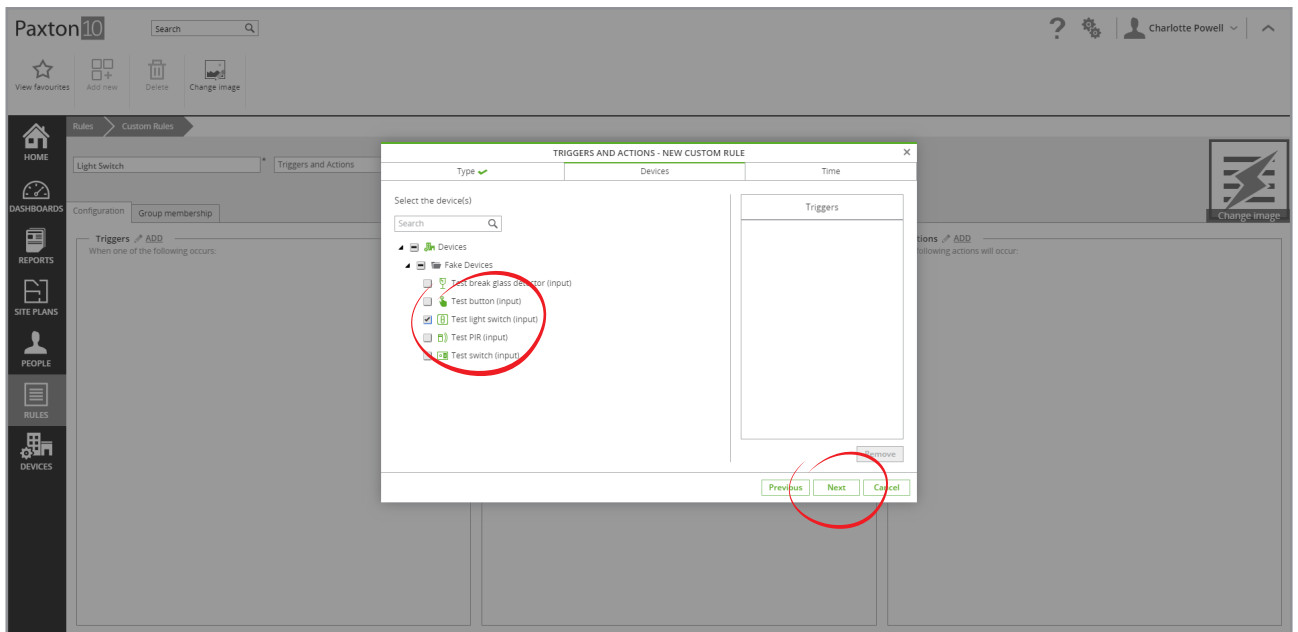


2. Next to Trigger type, select 'Input'.
3. Next to Trigger, select 'Input change of state'
4. Give the trigger a name – 'Switch' in this case, and click 'Next'

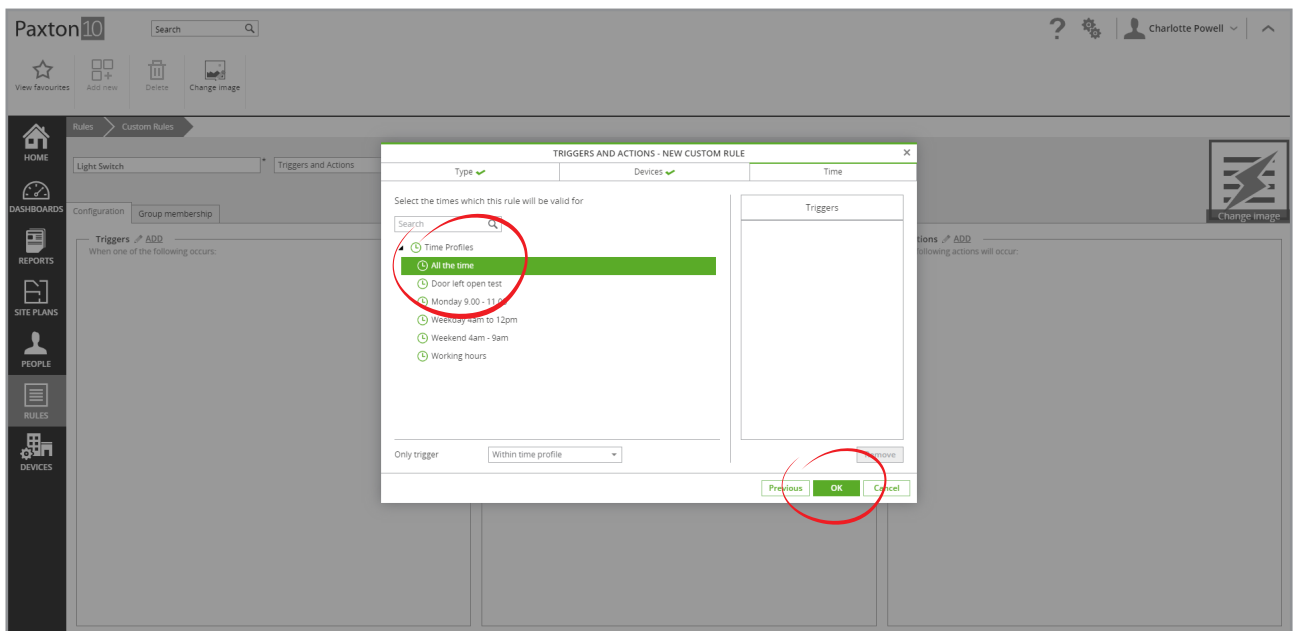


5. Select 'Light switch' from the list of devices, then click 'Next'



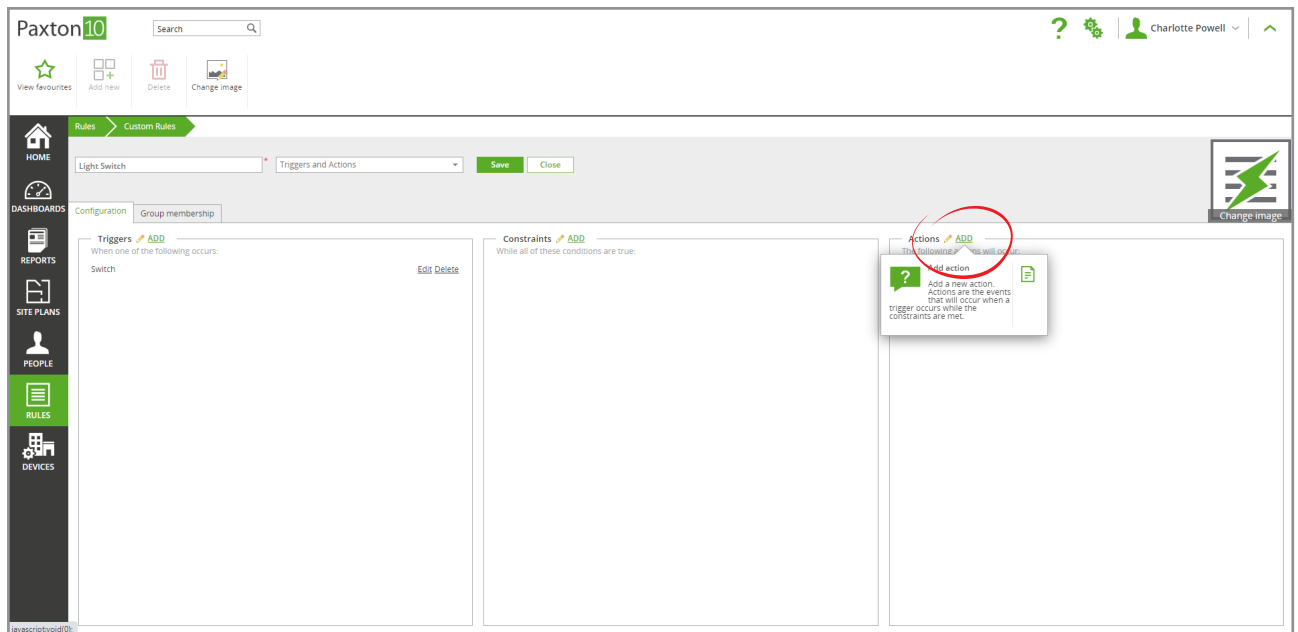


6. Select the time profile that this rule will work within – 'All the time' in this case, and click 'OK'

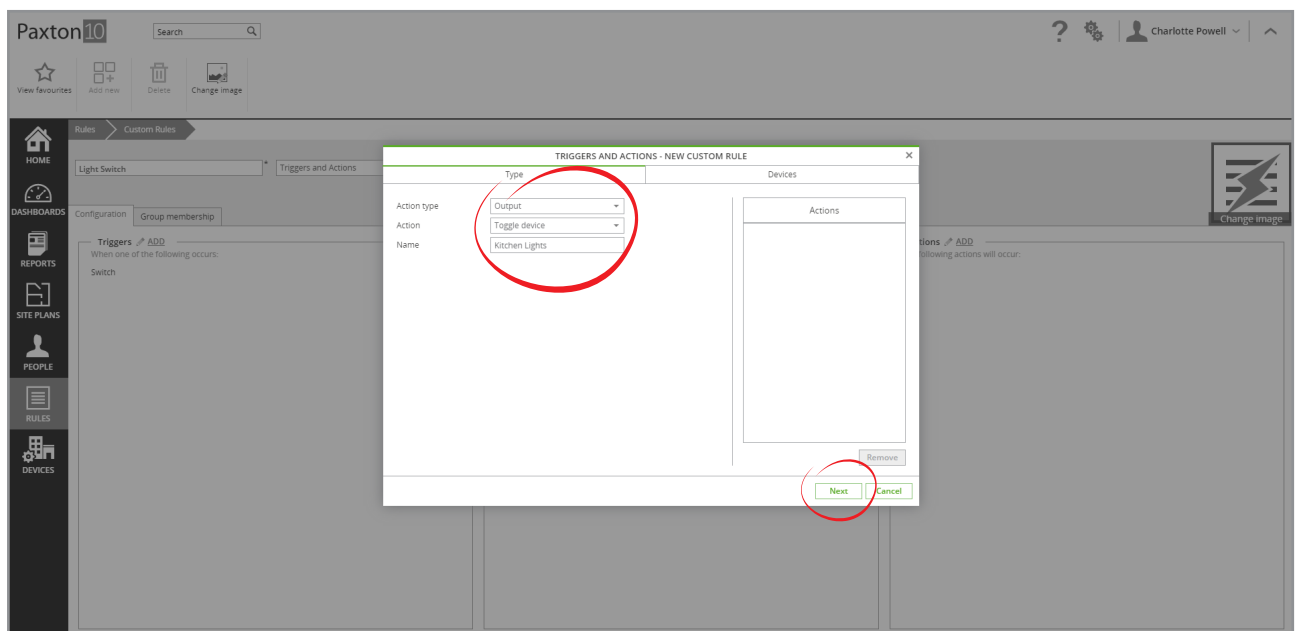


### Step 3 – Add the action

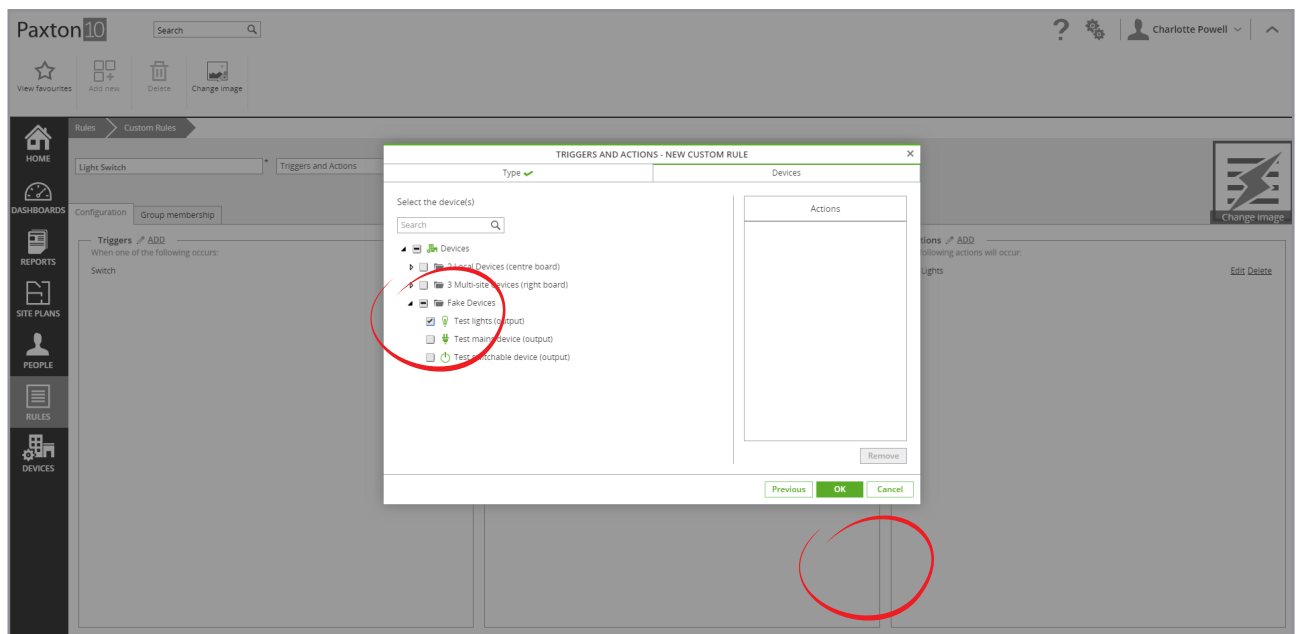
1. Click 'Add' by the Actions box



2. Next to Action type, select 'Output'
3. Next to Action, select 'Toggle device'
4. Give the action a name – 'Kitchen lights' in this case, then click 'Next'



5. Select 'Kitchen Lights' from the list of devices and click 'OK'



#### Step 4 – Test the rule works

1. Click 'Save' to save the rule
2. Press the switch to change its state – 'Kitchen Lights' should switch on
3. Press the switch again – 'Kitchen Lights' should switch off

### Using a Site plan soft button to turn the lights on

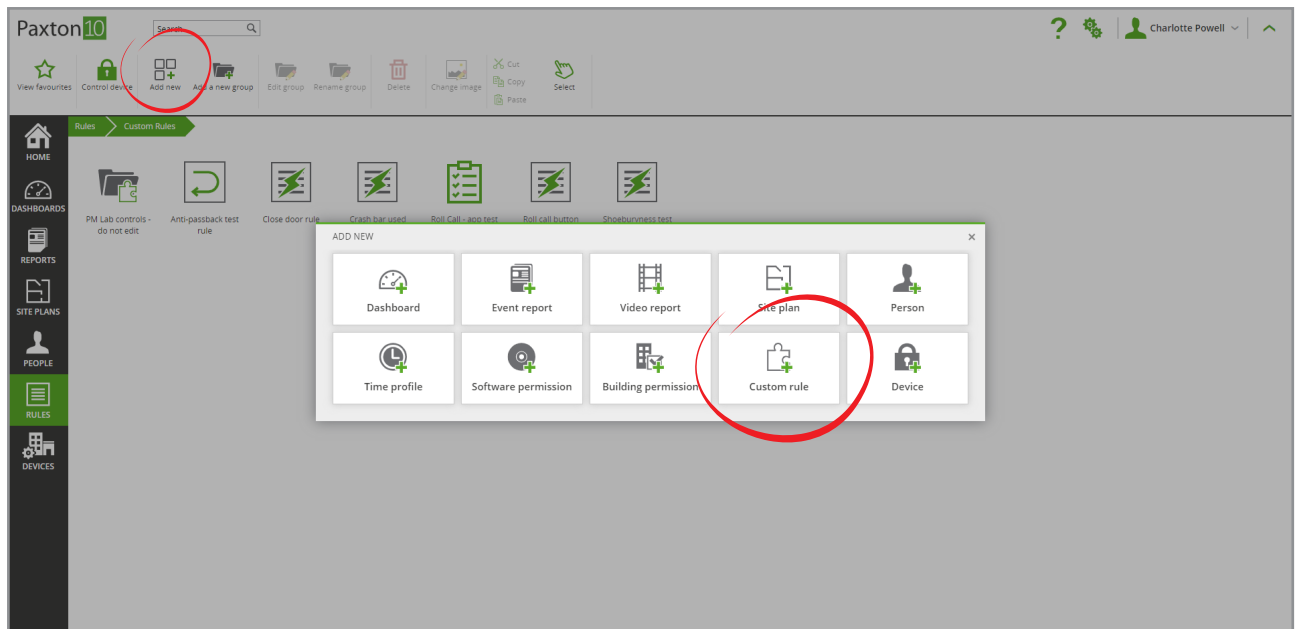
This example focuses on using soft buttons in a Site plan to perform an action.

The goal is to allow all Managers to turn the lights on from all Site plans.

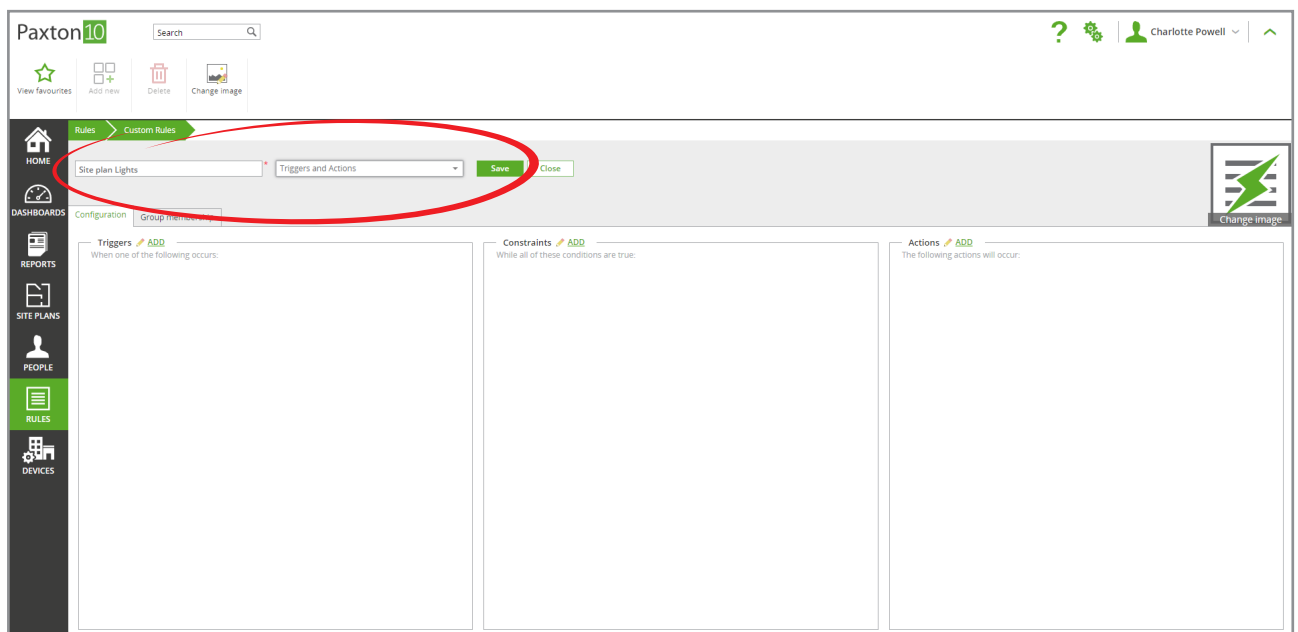
Pre-condition: a Site plan is created for each floor of Paxton house, each Site plan contains a soft button named 'Paxton lights', 2 Light devices exist named 'Upstairs lights' and 'Downstairs lights'. All staff are grouped according to their job.

#### Step 1 – Create a new rule

1. From the ribbon, select 'Add new'
2. Select 'Custom rule'

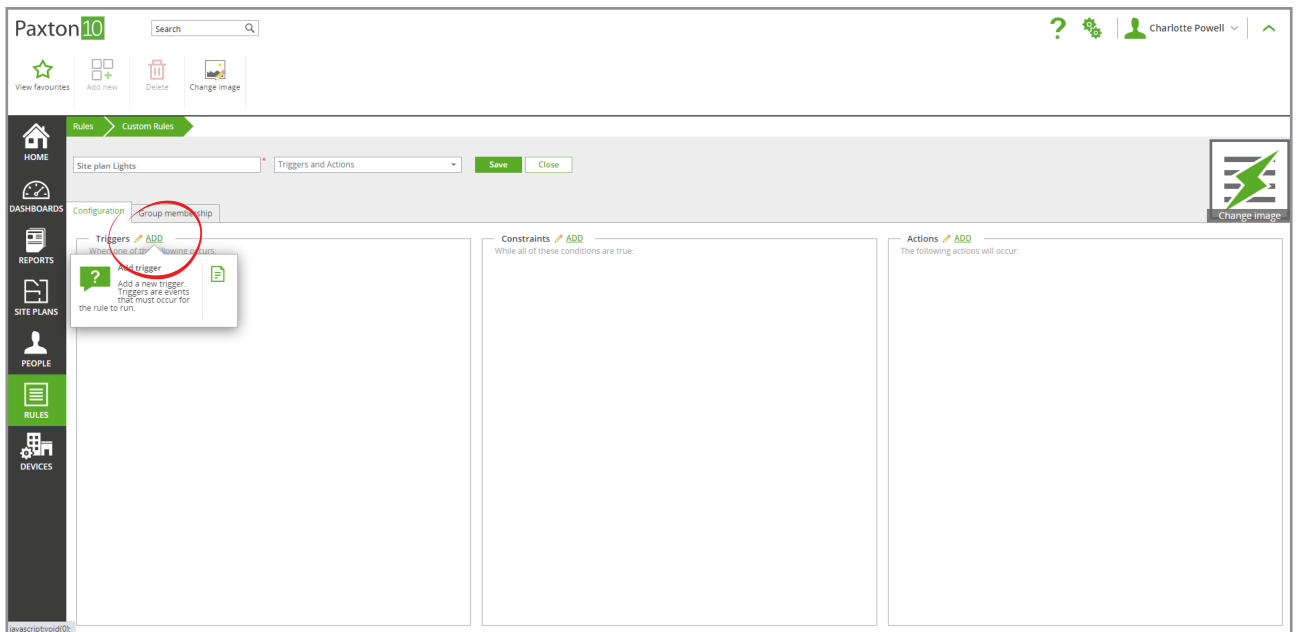


1. Enter a name – 'Site plan Lights' in this case, and select 'Triggers and Actions' from the drop-down list

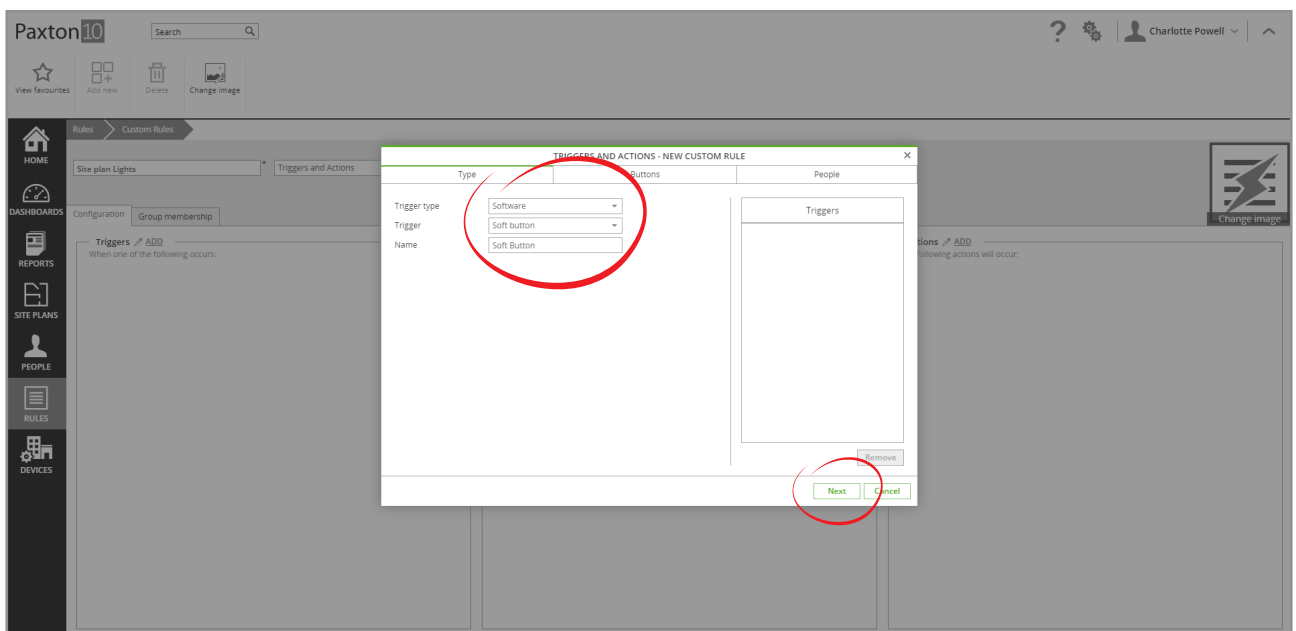


## Step 2 – Add the trigger

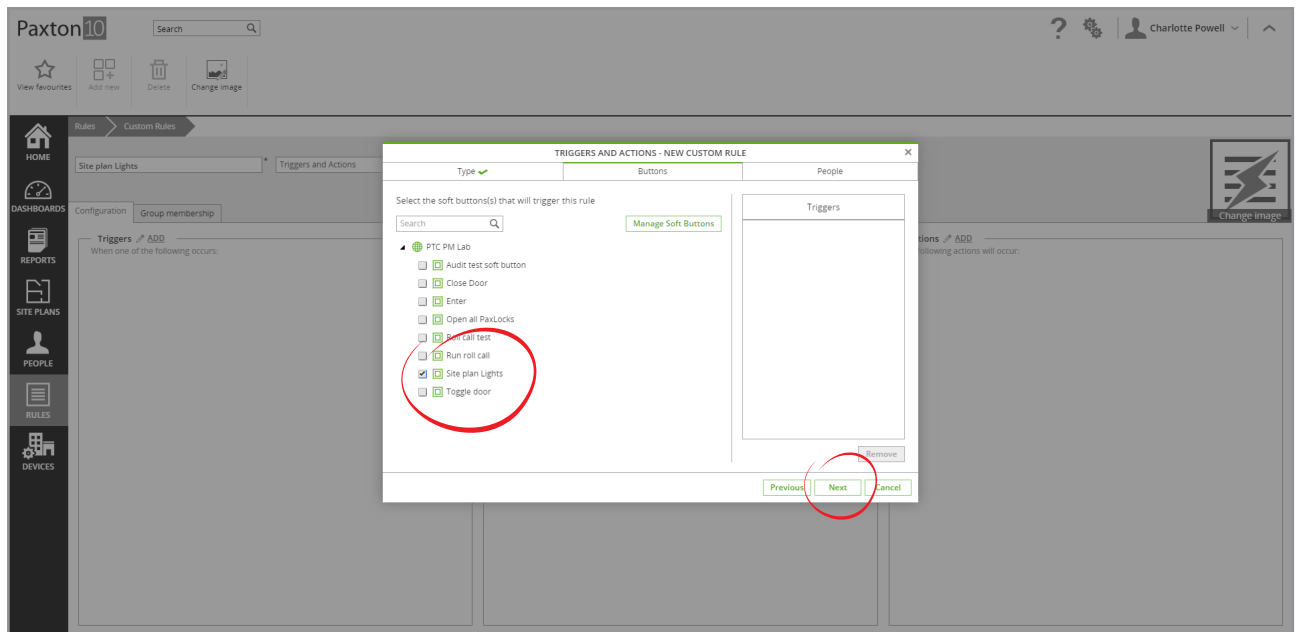
1. Click 'Add' by the Trigger box



2. Next to Trigger type, select 'Software'.
3. Next to Trigger, select 'Soft button'.
4. Give the trigger a name – 'Soft Button' in this case, then click 'Next'.

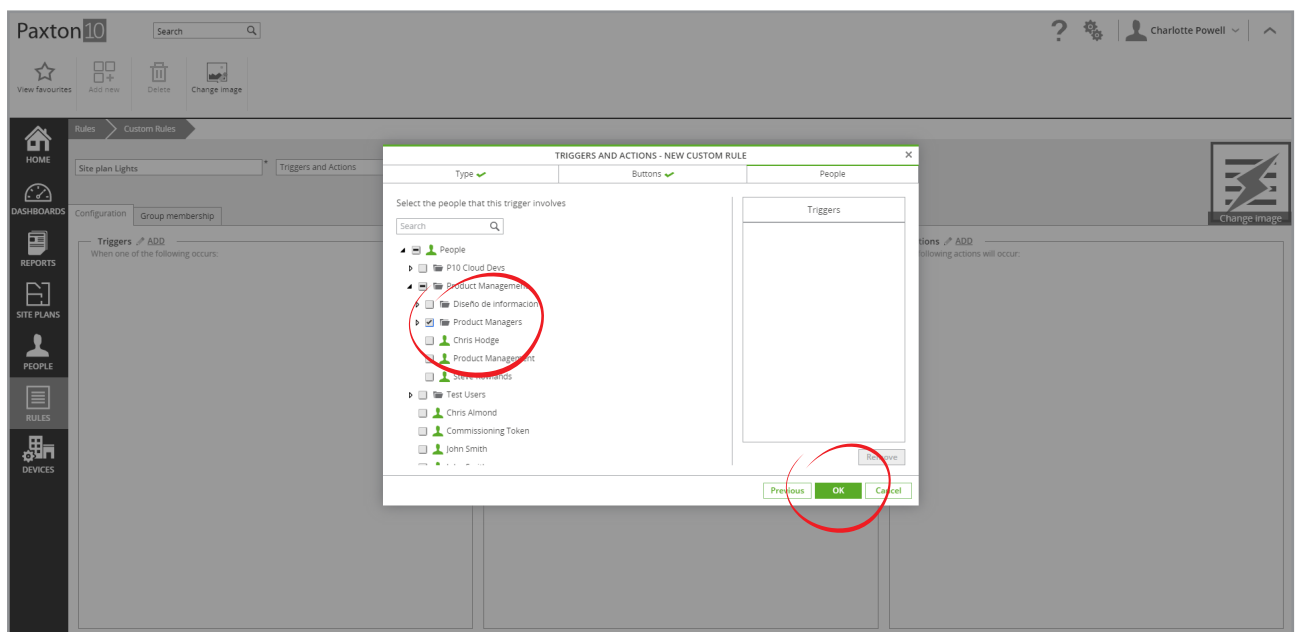


5. Select the 'Paxton Lights' soft button, then click 'Next'.



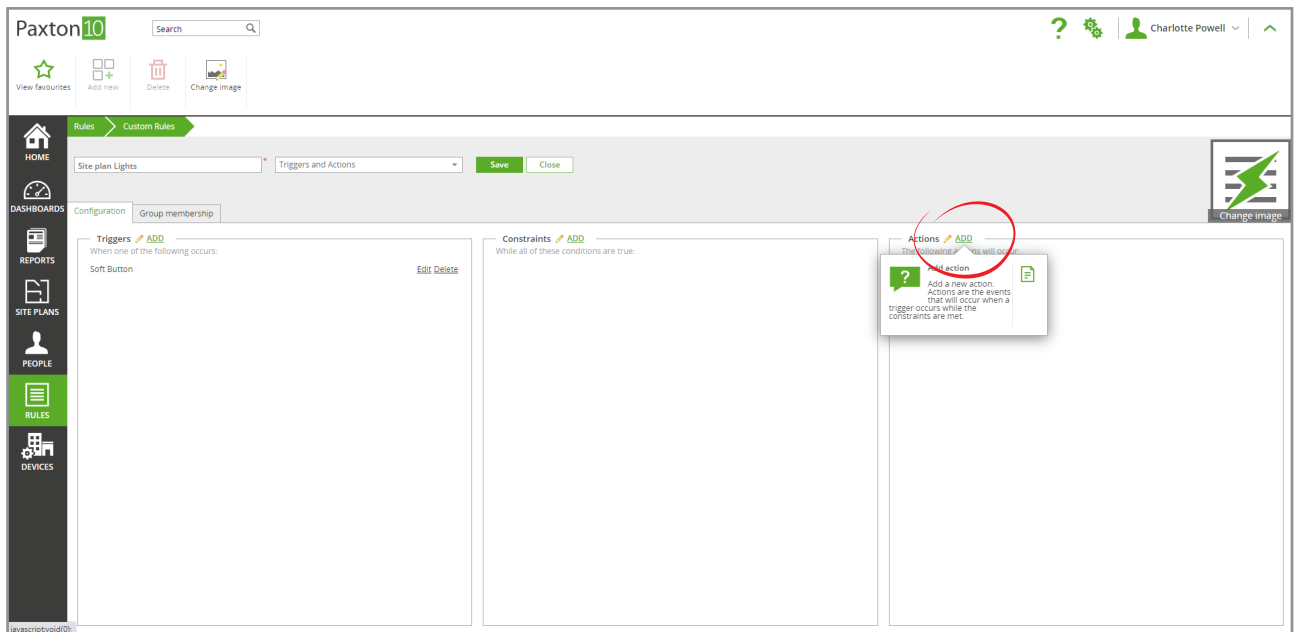
6. Select the people or groups that this rule will work for, in this case the '**Management**' group – the rule will only run if it's a person within this group that presses the soft button

7. Click '**OK**'

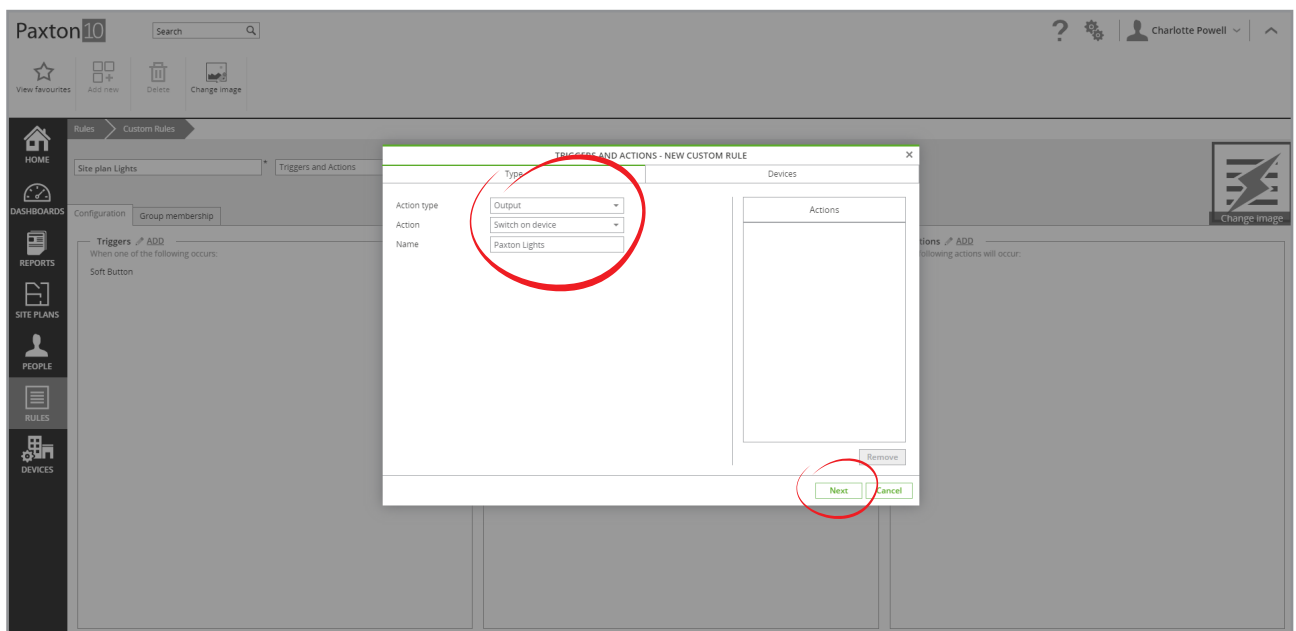


### Step 3 – Add the action

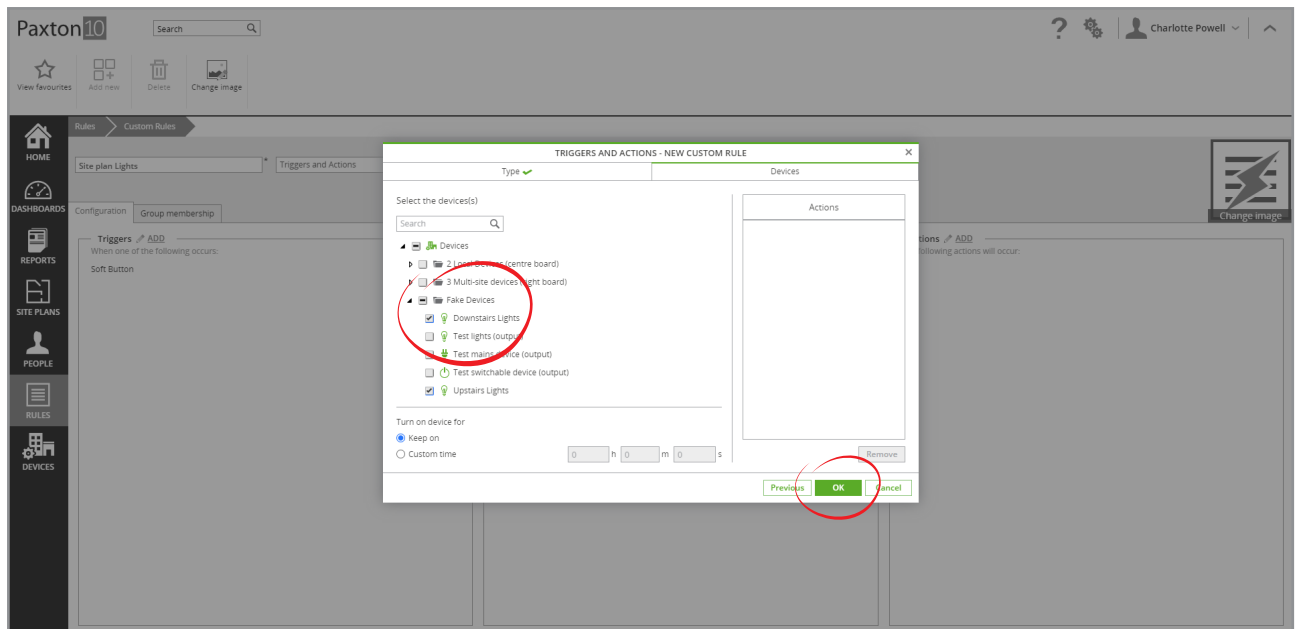
1. Click '**Add**' by the Actions box



2. Next to Action type, select '**Output**'
3. Next to Action, select '**Switch on device**'
4. Give the action a name – '**Paxton lights**' in this case, then click '**Next**'



5. Select the devices to switch on, in this case '**Upstairs Lights**' and '**Downstairs Lights**'
6. Select how long to keep the devices (our lights) on for, for our example we'll select '**Keep on**' to switch them on indefinitely
7. Click '**OK**'



#### Step 4 – Test the rule works

1. Click 'Save' to save the rule
2. Open one of the Site plans containing the 'Paxton Lights' soft button. Click the soft button – 'Upstairs Lights' and 'Downstairs Lights' should switch on

### Closing down a building at the end of the day

This example focuses on creating a rule with multiple triggers, constraints and actions.

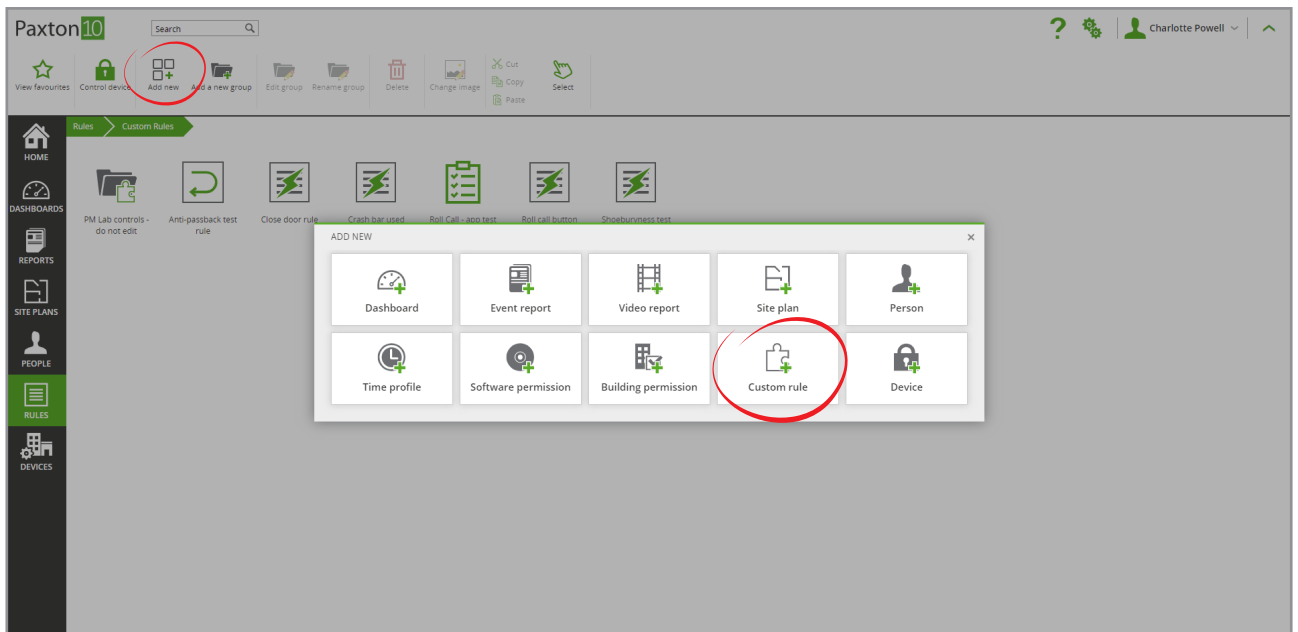
The goal is to provide all cleaners with an easy way to close down the building when they leave at the end of the day. We want all devices to turn off, all doors to lock and the intruder alarm to arm when the last cleaner swipes their token to leave the building, with a backup automated trigger in case the cleaner forgets. Constraints are needed to ensure the rule only runs when the building is empty and does not run more than once.

Pre-condition – Motion sensors are installed around the building whose states go closed when motion is detected. There is a reader for a light next to the building exit, this is the reader we will use for activating the rule. Cleaners are given a time profile, they are not allowed to stay later than this time profile allows.

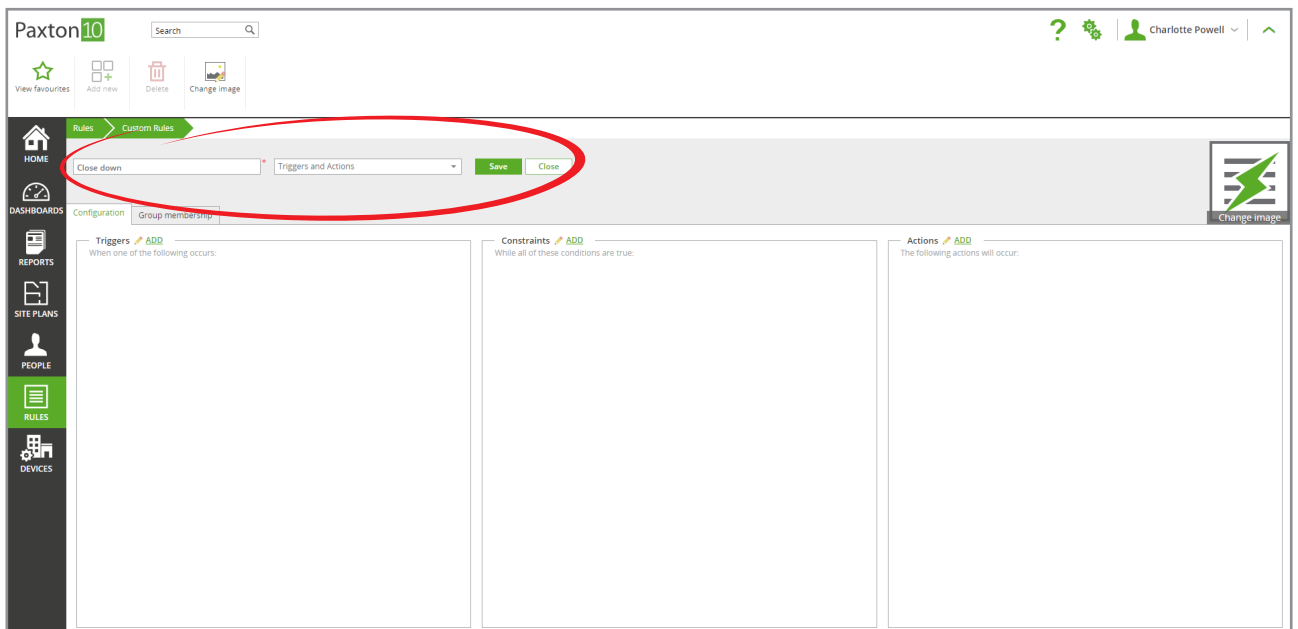
#### Step 1 – Create a new rule

1. From the ribbon, select 'Add new'
2. Select 'Custom rule'



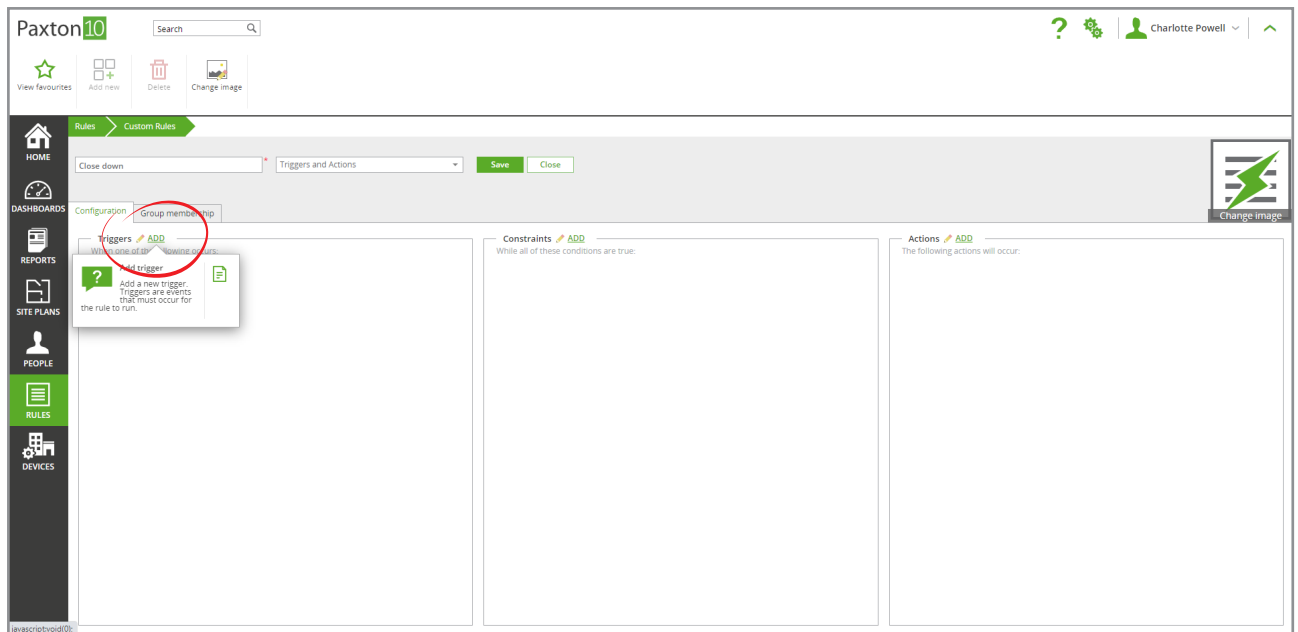


3. Enter a name – 'Close down' in this case, and select 'Triggers and Actions' from the drop-down list

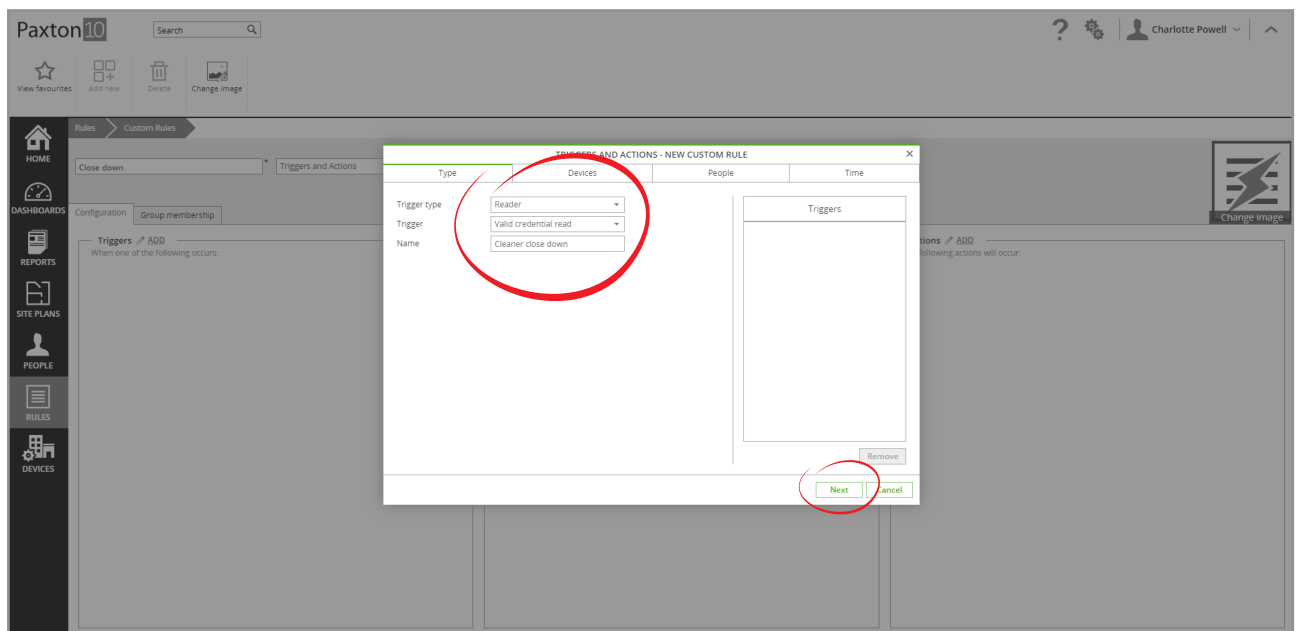


## Step 2 – Add the 'Token read' trigger

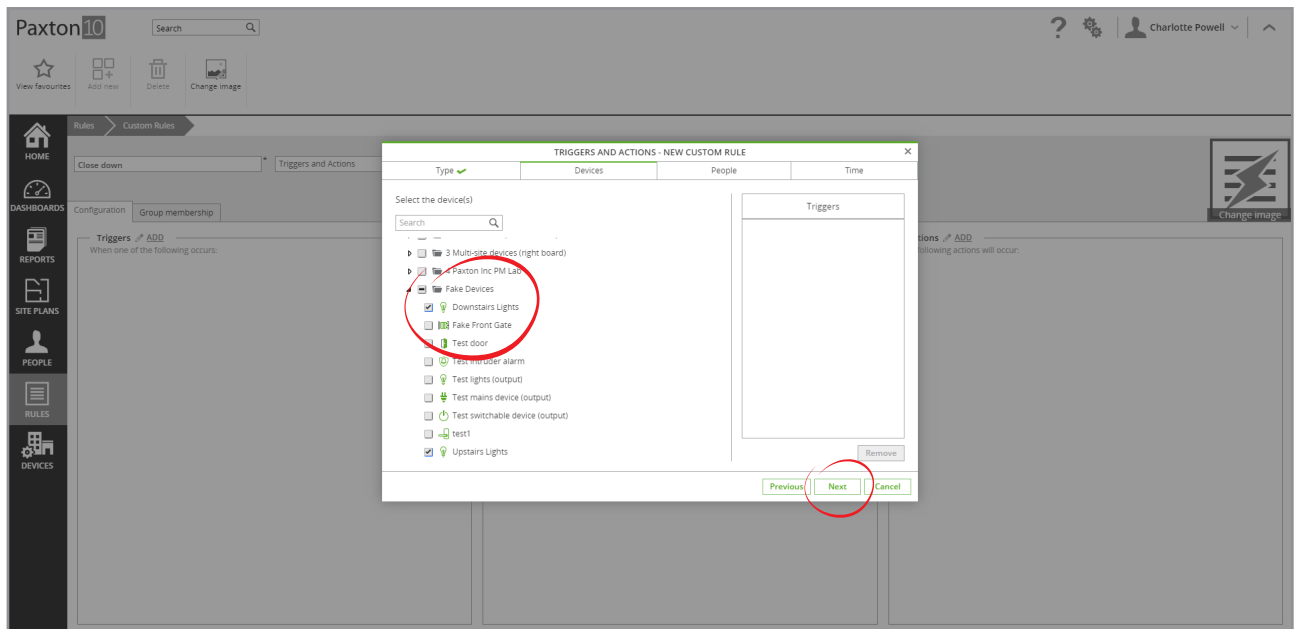
1. Click 'Add' by the Trigger box



2. Next to Trigger type, select '**Reader**'
3. Next to Trigger, select '**Valid credential read**'
4. Give the trigger a name – '**Cleaner close down**' in this case, then click '**Next**'

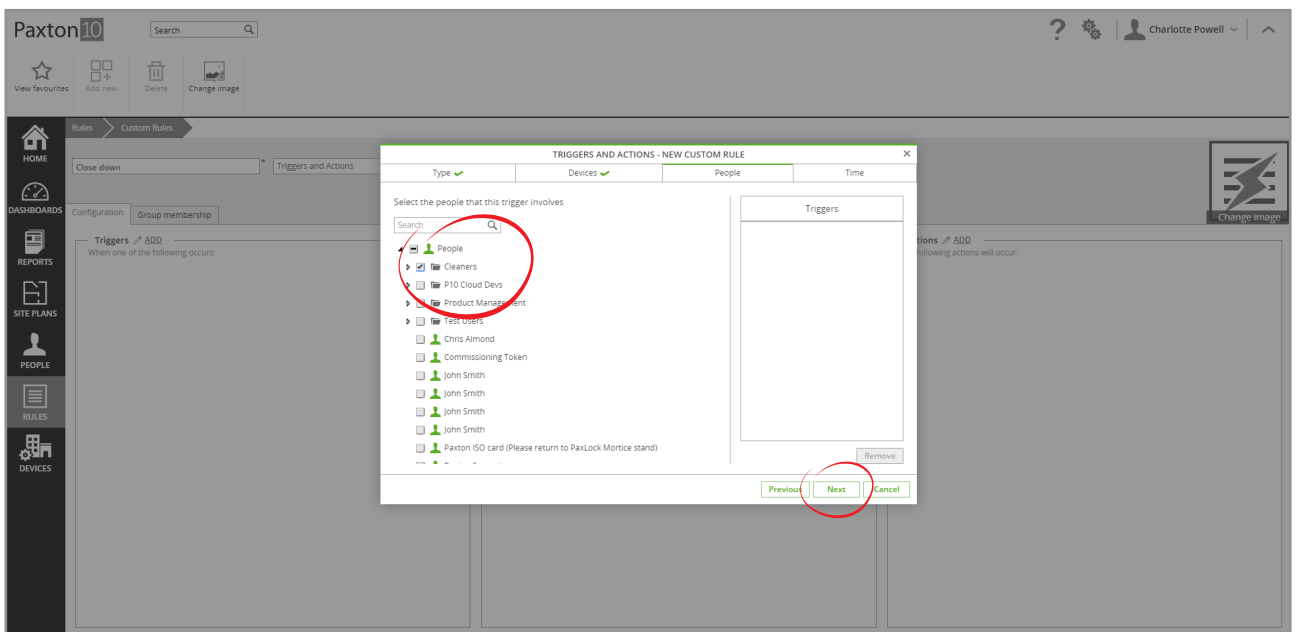


5. Locate the Lights device that the reader by the front door controls, then select it – the reader for this device will be where the cleaners can trigger the rule from
6. Click '**Next**'



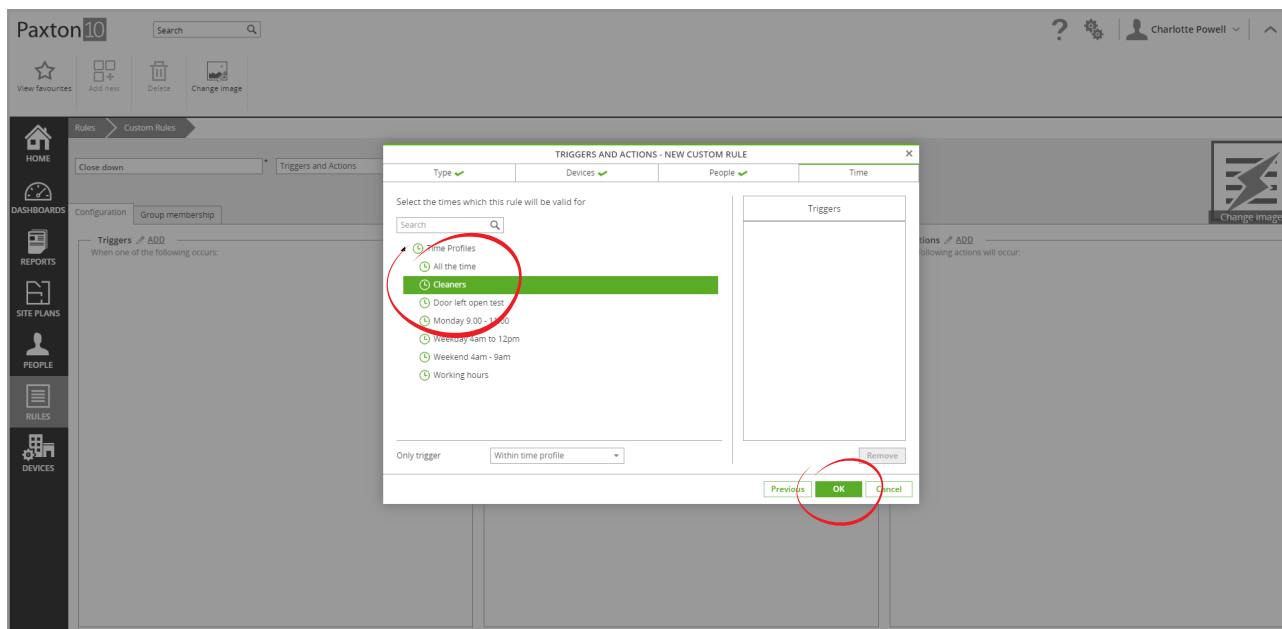
7. Select all the people (cleaners) that are allowed to close down the building – the rule will only run if it's one of these people that presents their token, for everyone else the reader will operate normally

8. Click 'Next'



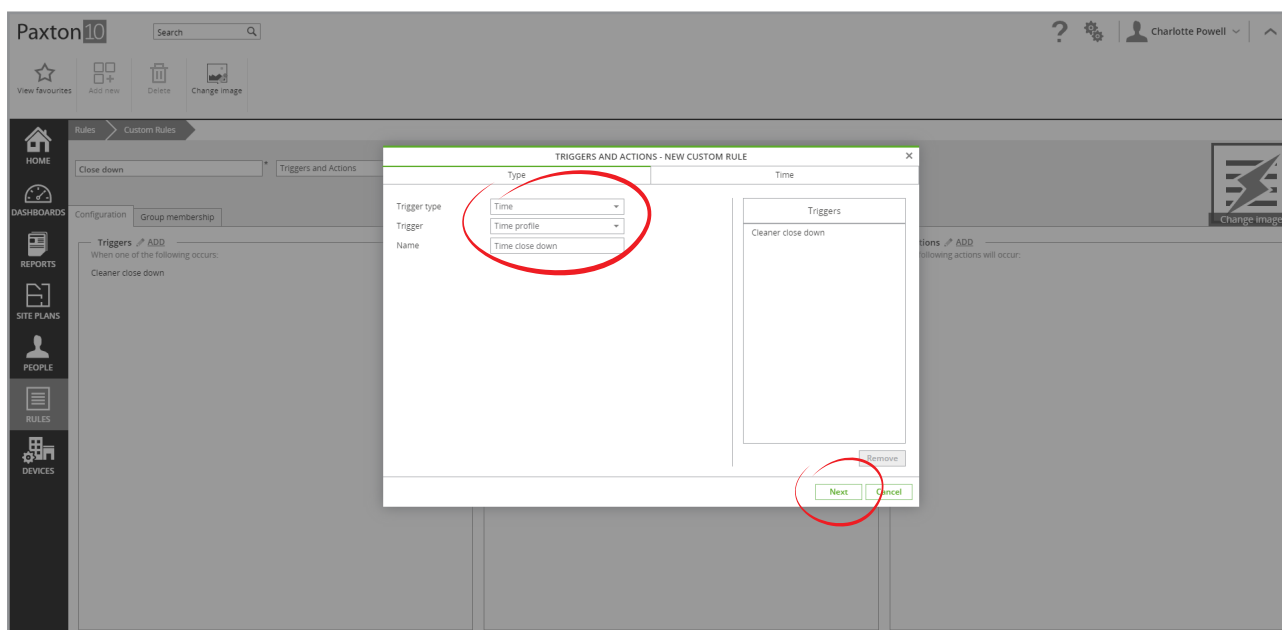
9. Select the Time profile for the cleaner's shifts – the cleaners can only close down the building during their shift

10. Click 'OK'

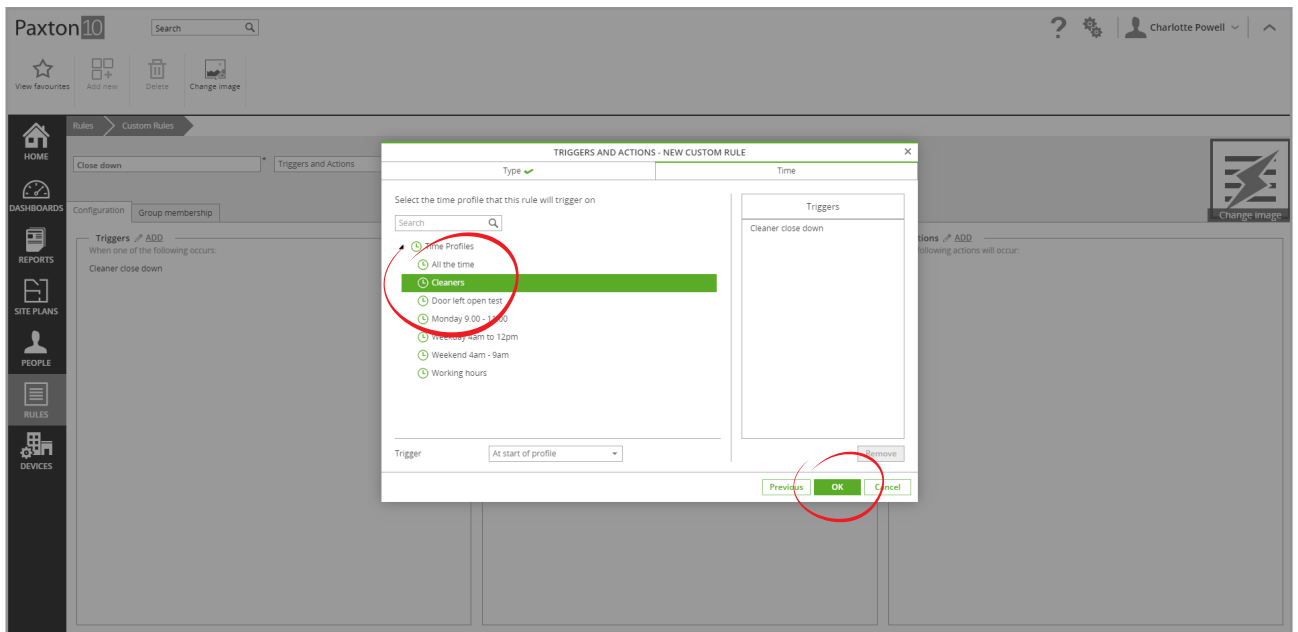


### Step 3 – Add the 'Automated' trigger

1. Click 'Add' by the Trigger box
2. Next to Trigger type, select 'Time'
3. Next to Trigger, select 'Time profile'
4. Give the trigger a name – 'Time close down' in this case, then click 'Next'

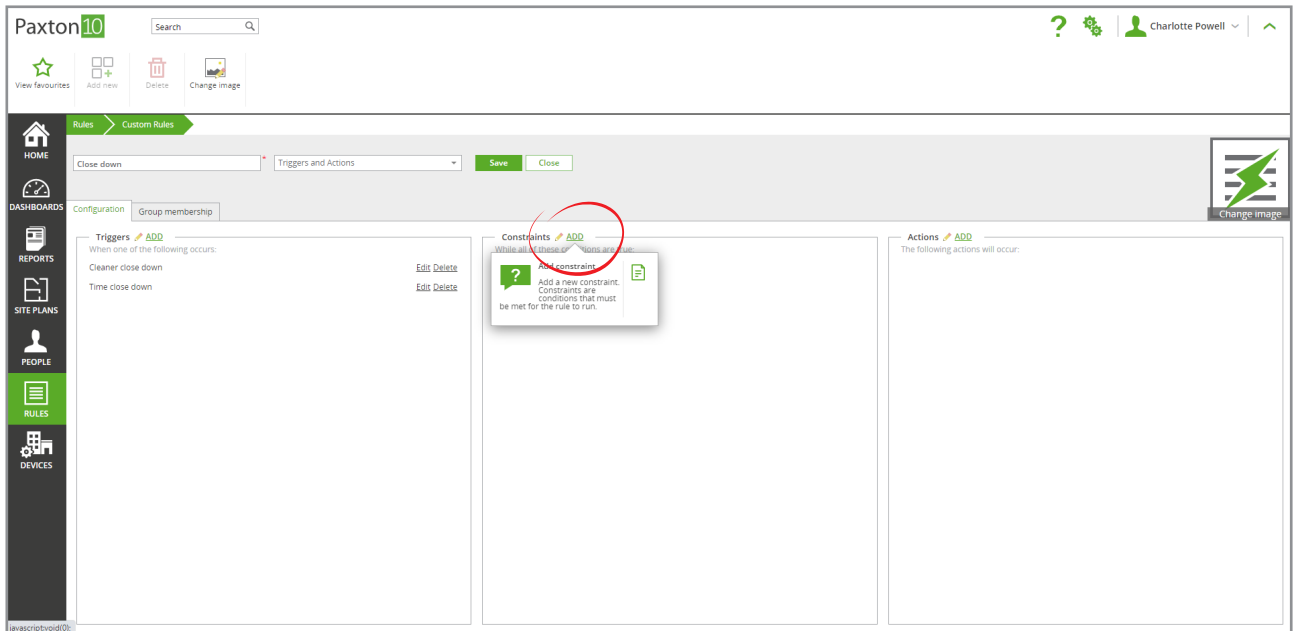


5. Select the cleaners time profile
6. Next to Trigger, select 'At end of profile' – the cleaners should not be there after their time profile, so this trigger will make the rule run automatically when the cleaners time profile ends
7. Click 'OK'

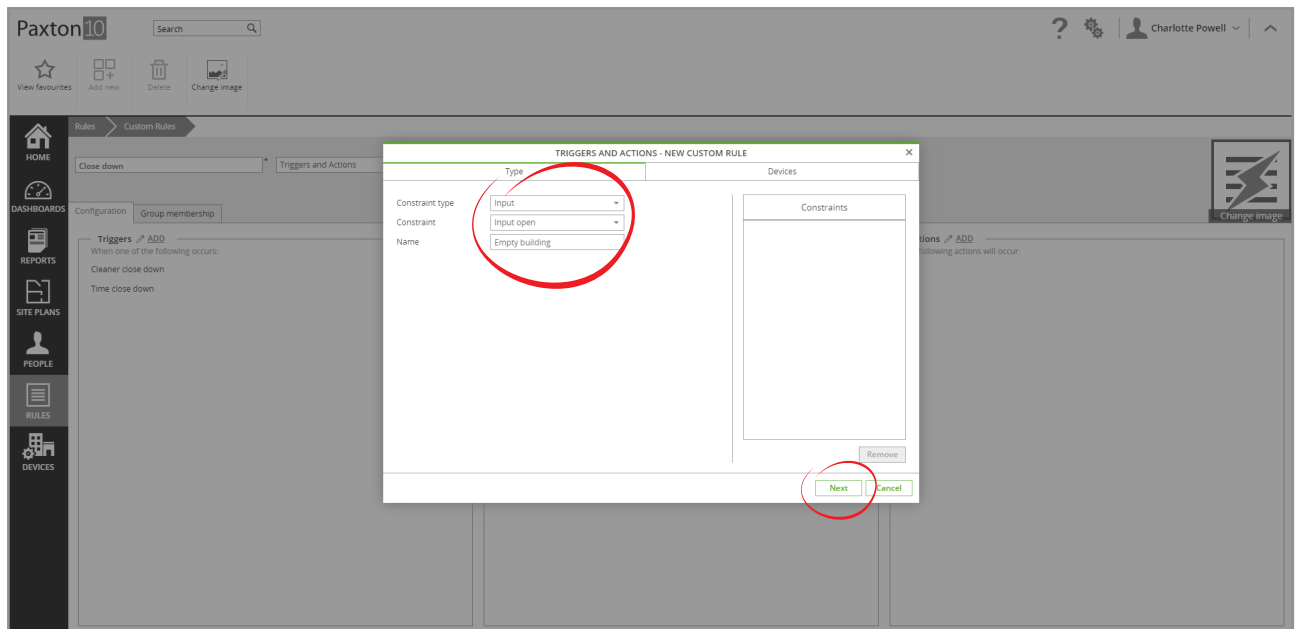


#### Step 4 – Add the 'Empty building' constraint

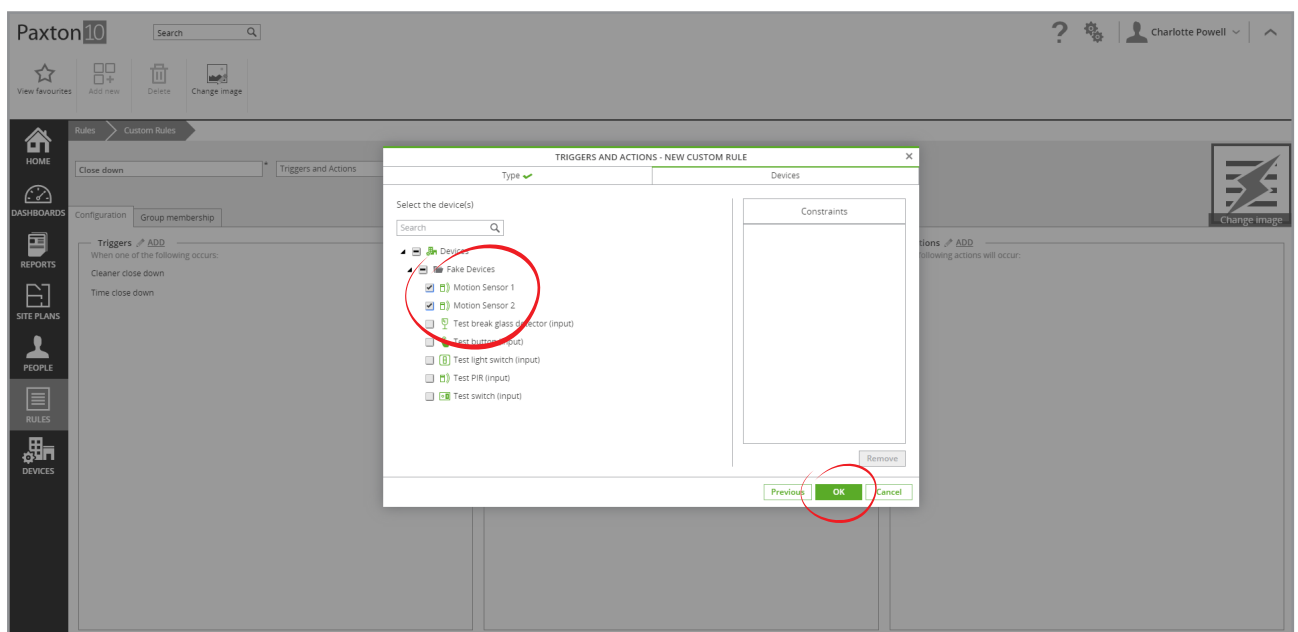
1. Click 'Add' by the Constraint box



2. Next to Constraint type, select 'Input'
3. Next to Constraint, select 'Input open'
4. Give the constraint a name – 'Empty building' in this case, then click 'Next'

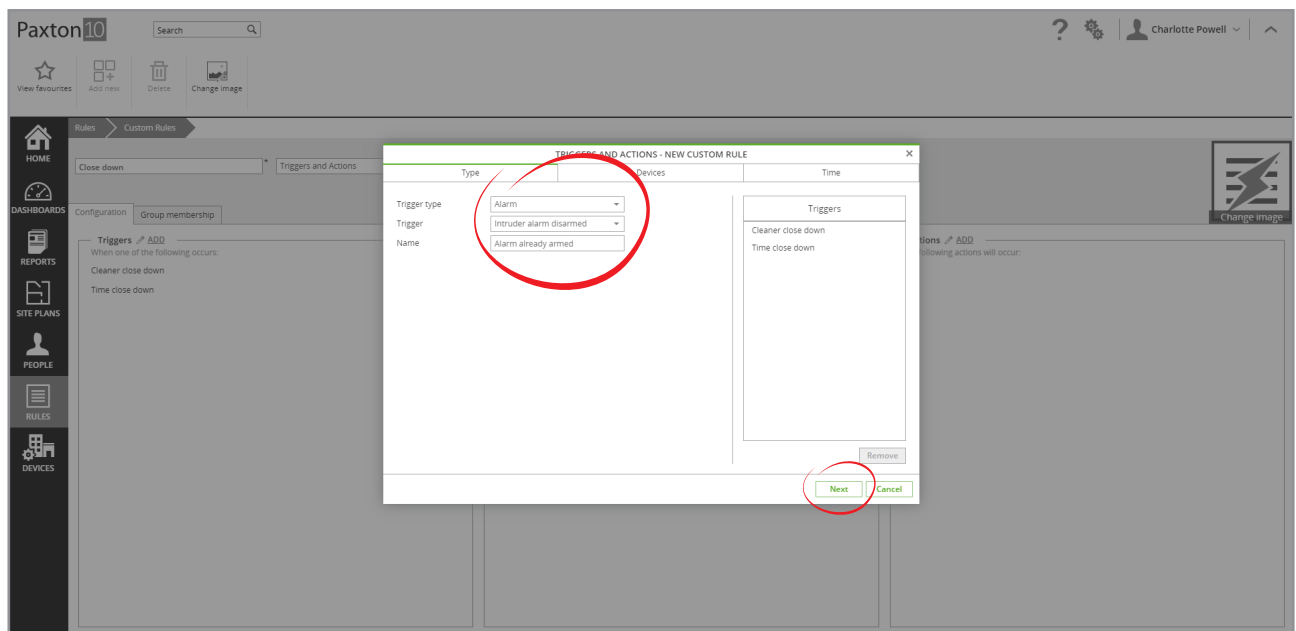


5. Select all the motion sensors – The rule will never run unless all these inputs are open, in this case meaning there is no motion
6. Click 'OK'

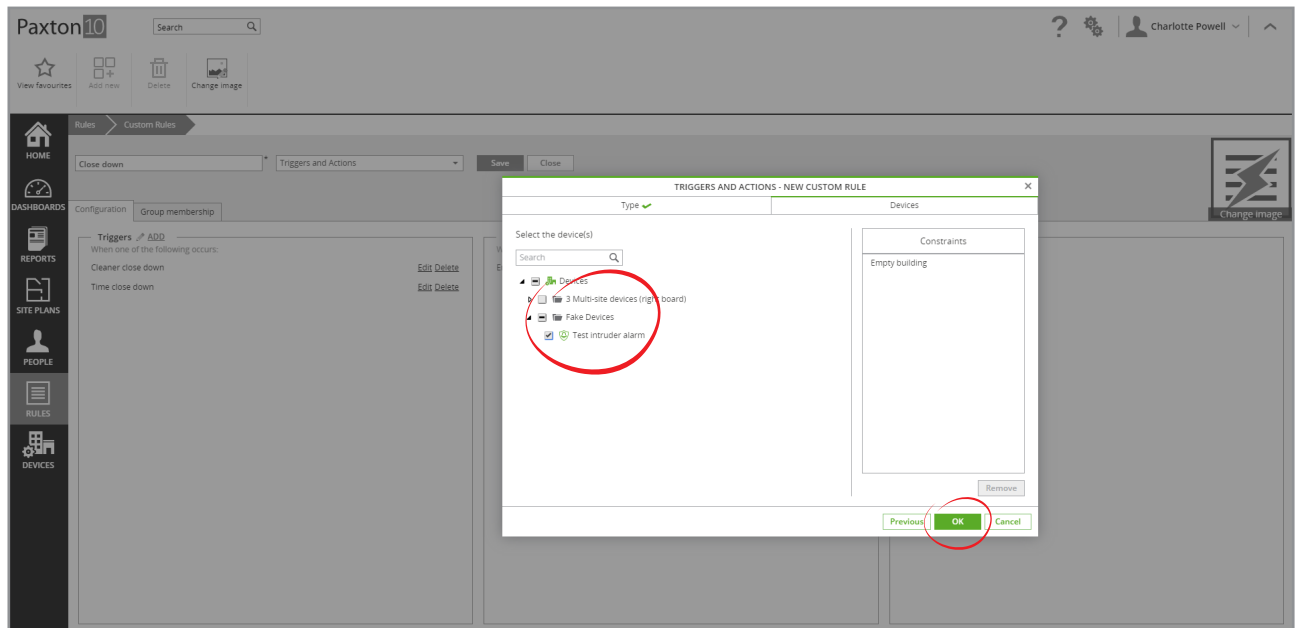


#### Step 5 – Add the 'Alarm already armed' constraint

1. Next to Constraint type, select 'Alarm'
2. Next to Constraint, select 'Intruder alarm disarmed'
3. Give the constraint a name – 'Alarm already armed' in this case, then click 'Next'

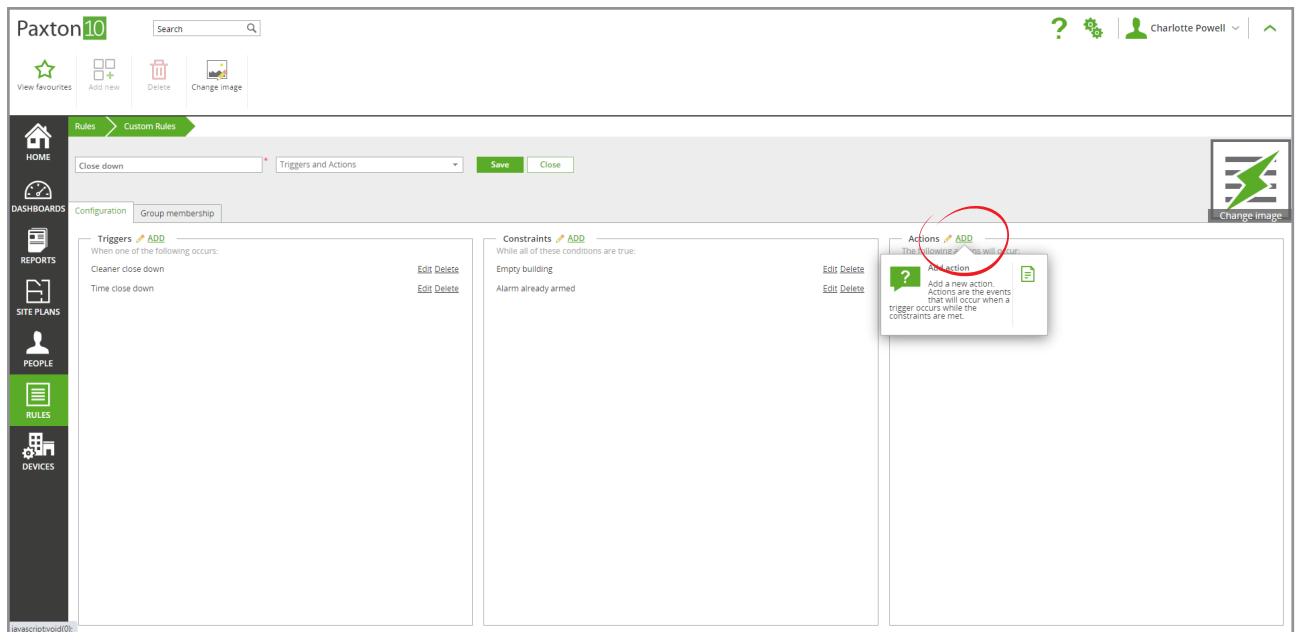


4. Select the Intruder alarm – If the Intruder alarm has already been armed, the rule will not run
5. Click 'OK'

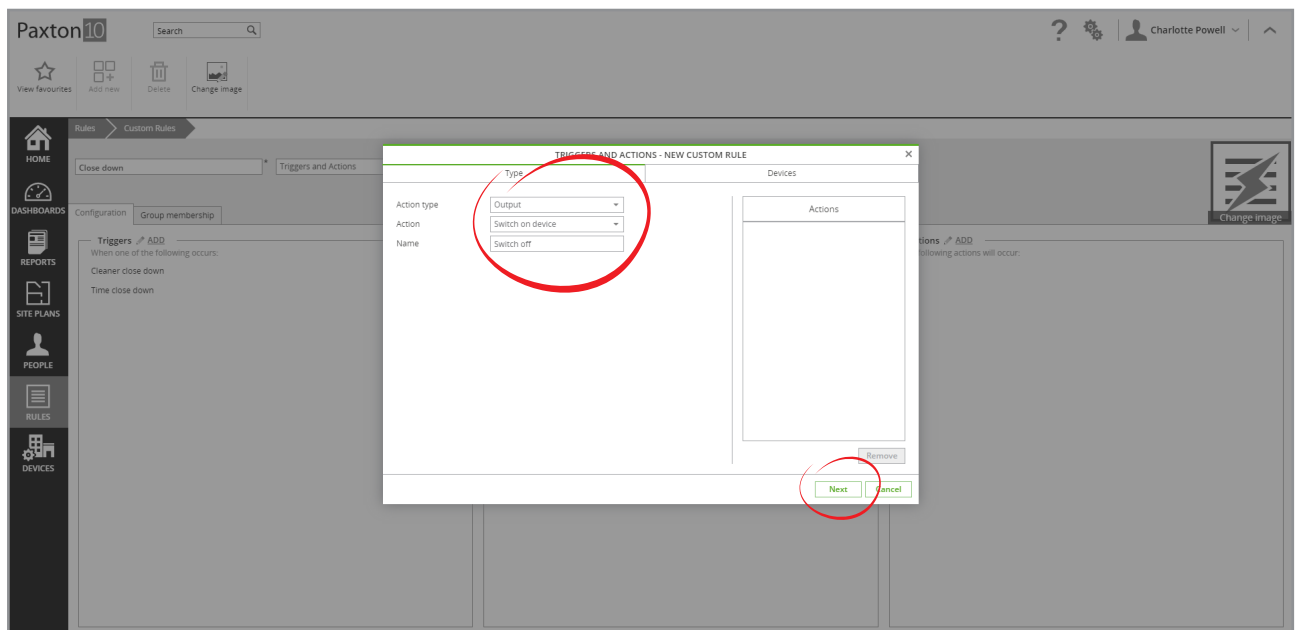


#### Step 6 – Add the 'Switch off' action

1. Click 'Add' by the Actions box

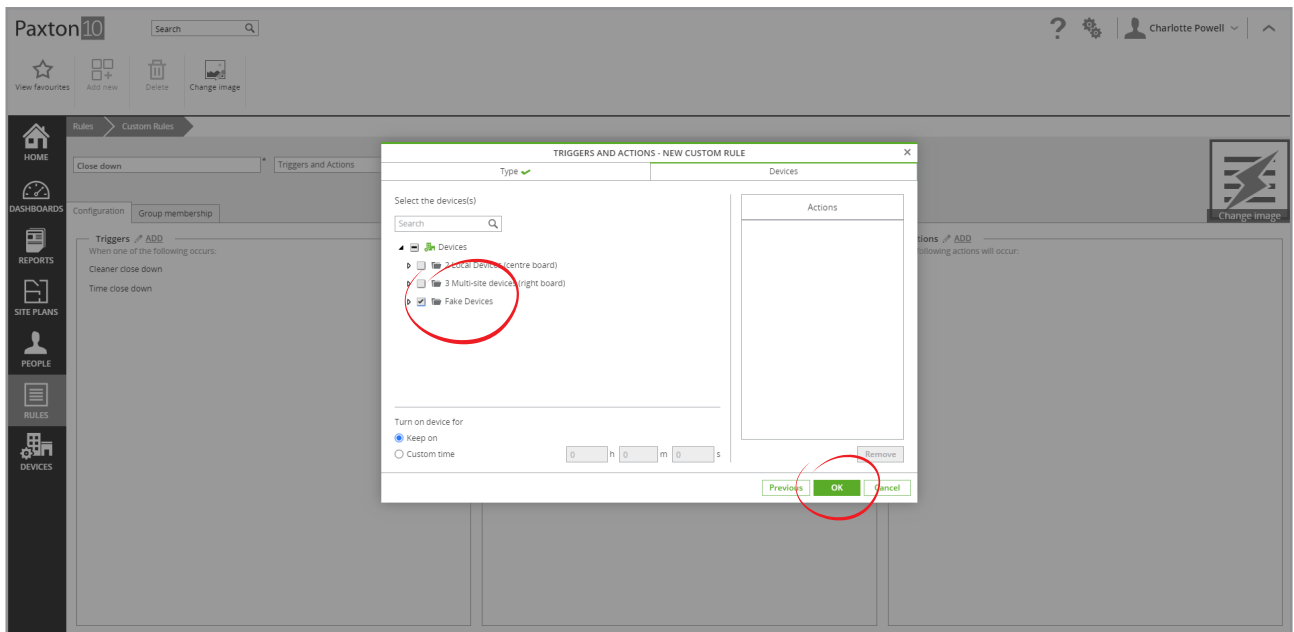


2. Next to Action type, select 'Output'
3. Next to Action, select 'Switch off device'
4. Give the action a name – 'Switch off' in this case, then click 'Next'



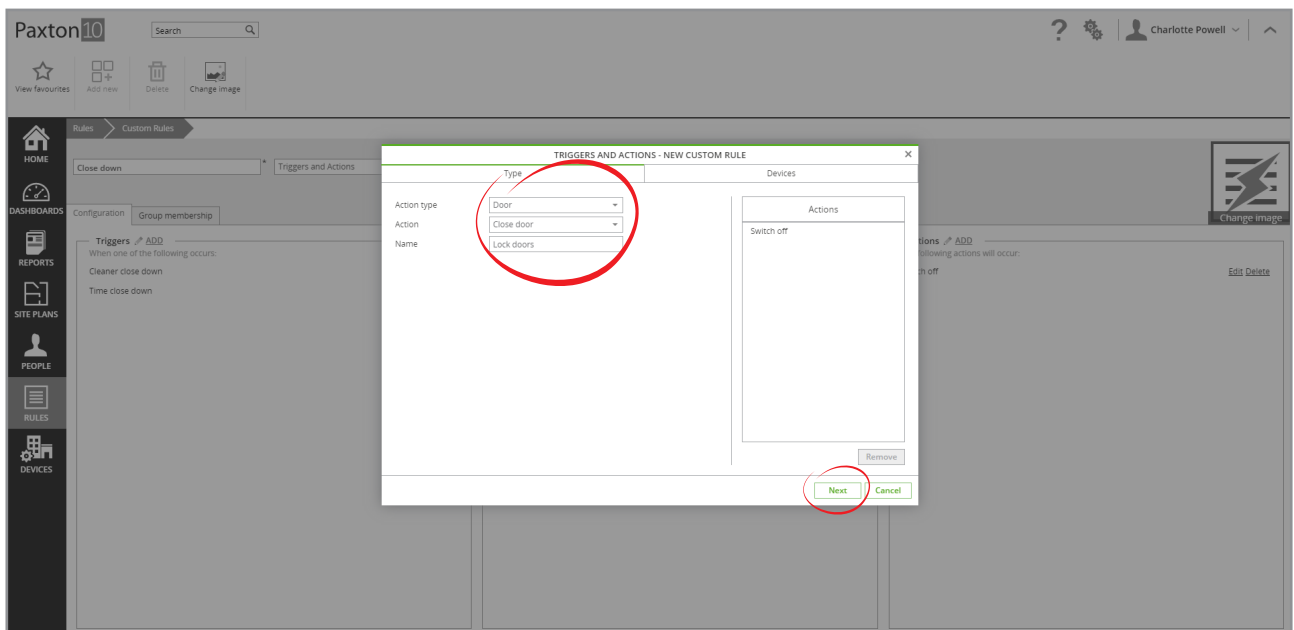
5. Select the devices to switch off, in this case we will check the 'Devices' checkbox to select everything
6. Click 'OK'



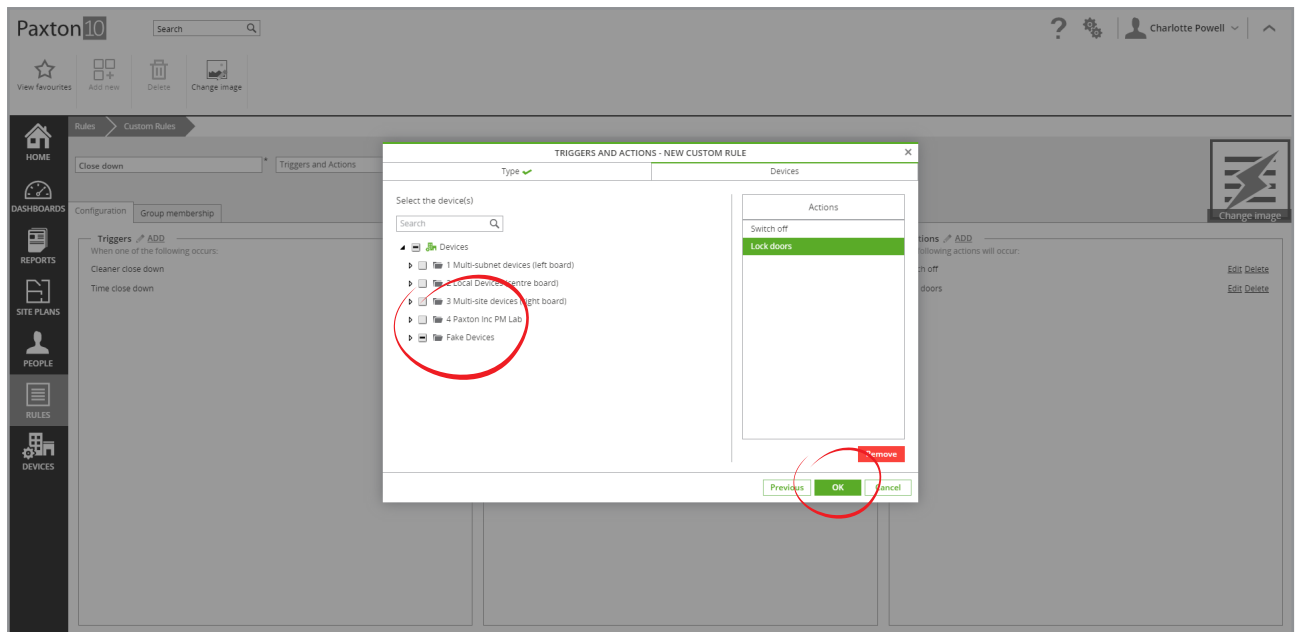


### Step 7 – Add the 'Lock doors' action

1. Click 'Add' by the Actions box
2. Next to Action type, select 'Door'
3. Next to Action, select 'Close door'
4. Give the action a name – 'Lock doors' in this case, then click 'Next'

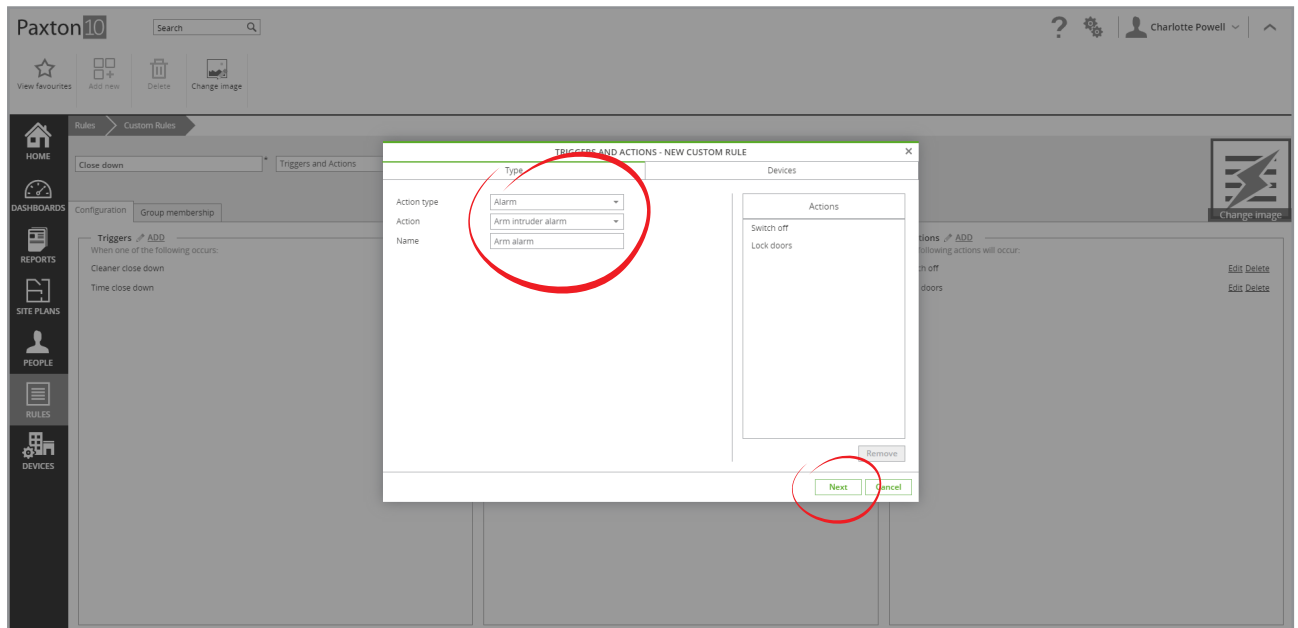


5. Select the doors to lock, in this case we will check the 'Devices' checkbox to select everything
6. Click 'OK'

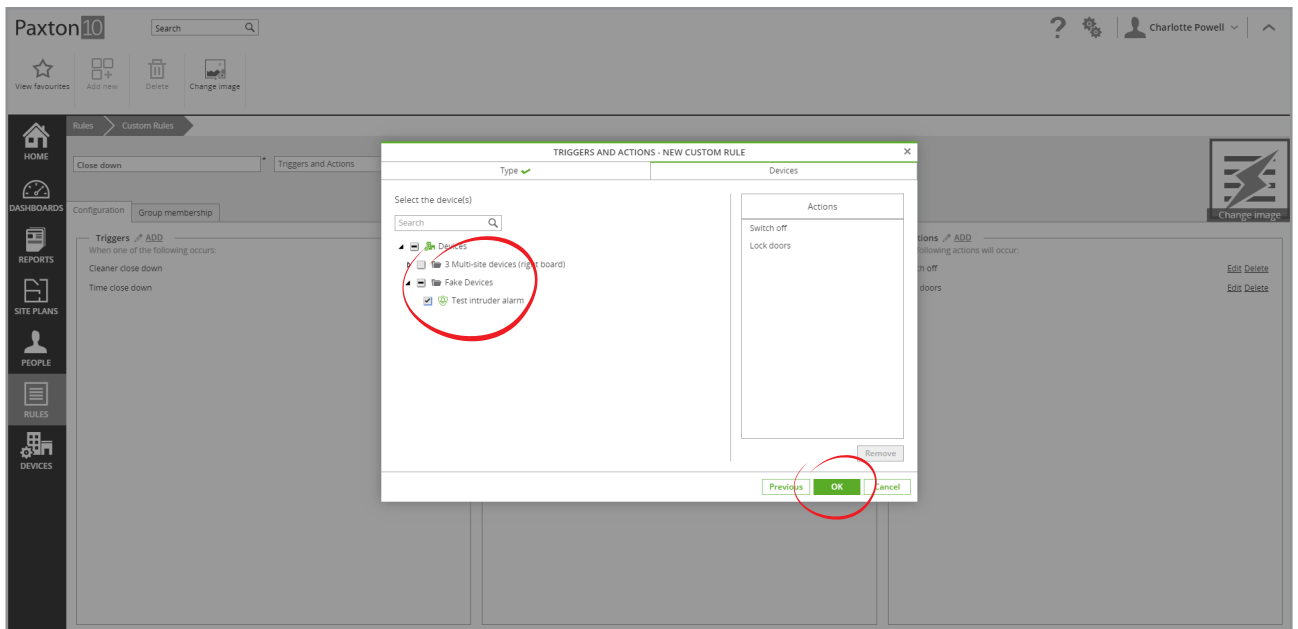


### Step 8 – Add the 'Arm alarm' action

1. Click 'Add' by the Actions box
2. Next to Action type, select 'Alarm'
3. Next to Action, select 'Arm intruder alarm'
4. Give the action a name – 'Arm alarm' in this case, then click 'Next'



5. Select the intruder alarm to arm
6. Click 'OK' and 'Save'



### Step 9 – Test the rule works

1. During a cleaners shift, present their token to the reader for the light when everyone has left

All doors should lock, devices turn off and the intruder alarm will arm

2. During a cleaners shift, leave the building without setting the alarm

The rule should run automatically at the end of the time profile

3. Present a token to the reader that does not belong to the cleaners

The rule will not run. The reader will perform its usual operation

