SMART

User Guide

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SMART

SMART is a ground-breaking software that gives you complete insight into your plant movements, in real-time.

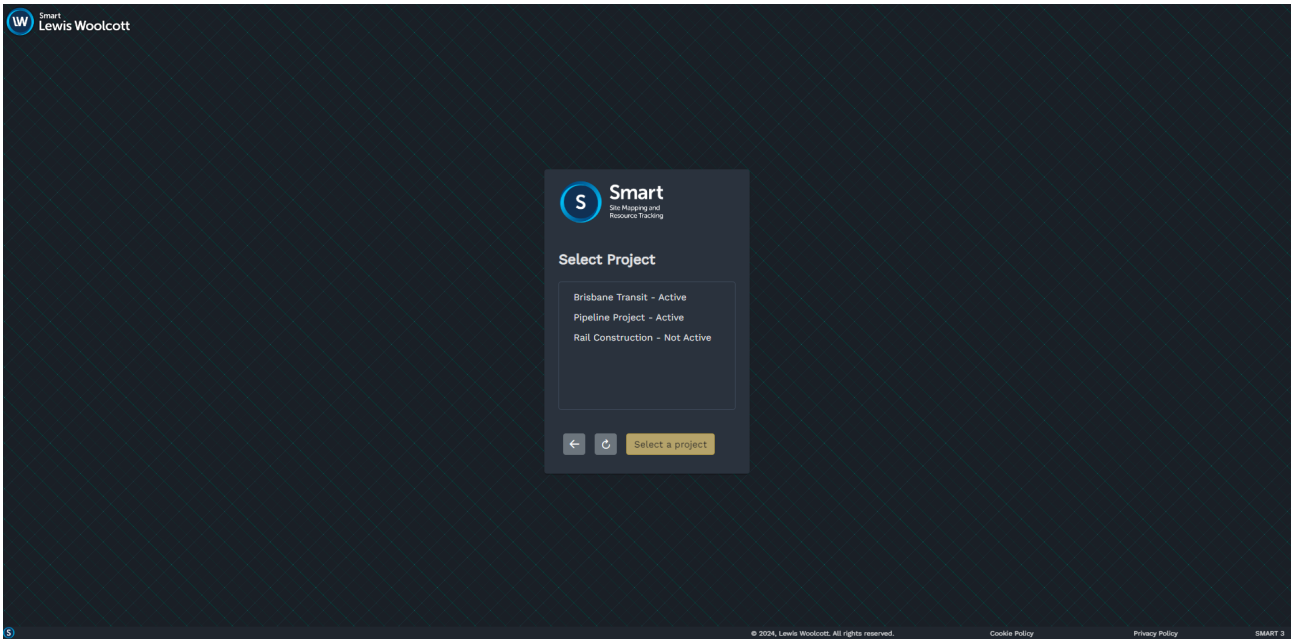
The latest version of this user guide is available online at https://docs.smartcoro.com. This copy was created on Jul 10, 2024.

Getting Started

Getting Started

Project Select

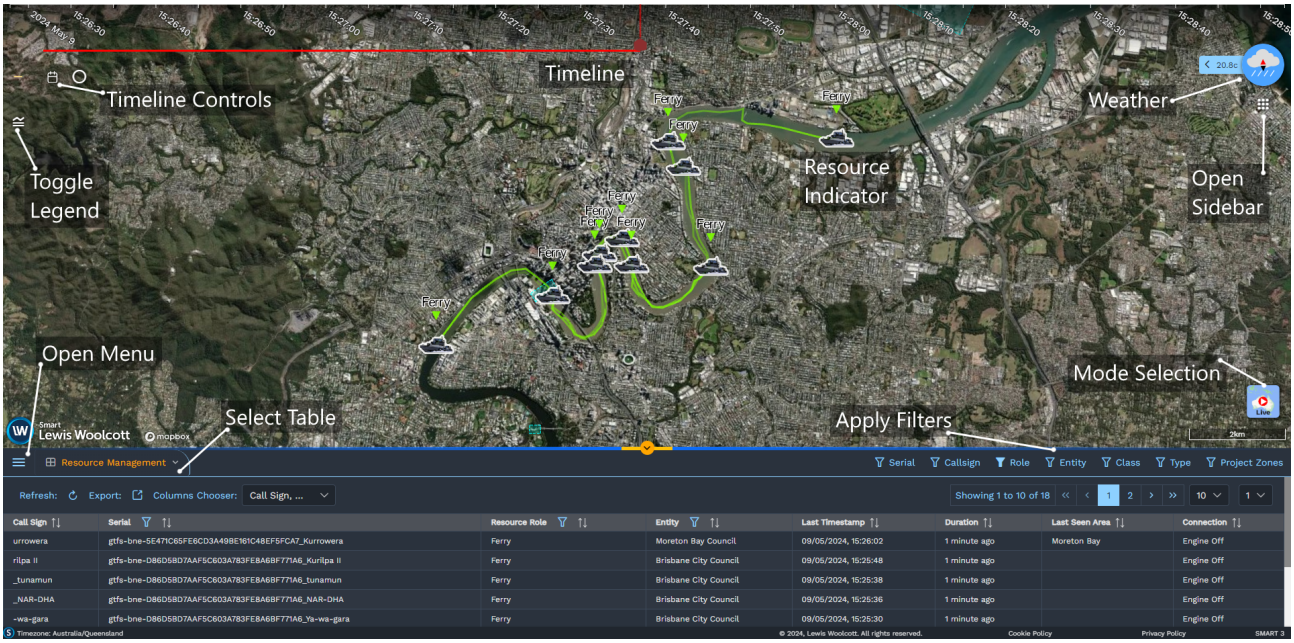
The SMART portal is accessed at www.smartcoro.com . Once you have signed in, you will see a list of all projects that you have access to.



Projects marked *Active* are currently collecting real-time data from resources. Once a project is complete, it is marked as *Not Active* . You can still explore historical data and view all analytics for these projects.

Select a project and click ‘Load’ to open the Map View for that project.

Map View



The SMART interface is divided into a few main components:

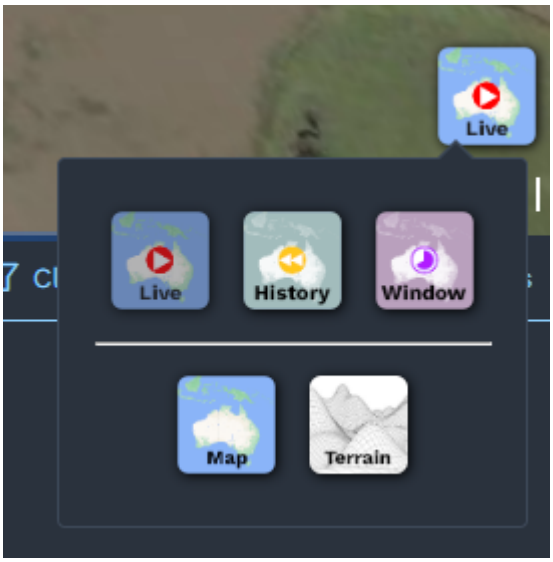
- The Map
- The Timeline
- The Sidebar
- The Tables

The Map

The map view is designed to be intuitive to navigate:

- To pan the map, hold the left mouse button and drag the map
- To rotate, hold the right mouse button and drag the map. You can tilt the map for more detail in 3D. To reset the map to the original orientation, click on the compass.
- To the zoom map, use the mouse scroll wheel.

Changing Modes



SMART has three main modes.

- Live View provides visibility of all resources on the ground in real-time.
- Historic View allows visualising the site at any point in the past
- Window View enables exploring coverage over a longer time window.

You can swap between these three modes at any time using the mode selector in the bottom right corner of the map view.

Additionally, you can switch between satellite imagery and a stylised basemap; or enable 3D terrain.

The Timeline

The Timeline is situated at the top of the screen. In Historic and Window modes, you can drag the timeline to explore the site at any moment in time.

You can swap between the timeline modes at any time using the map mode selection icon.

The Sidebar

To open up the map tools sidebar , click on the icon in the top right corner of the scren.

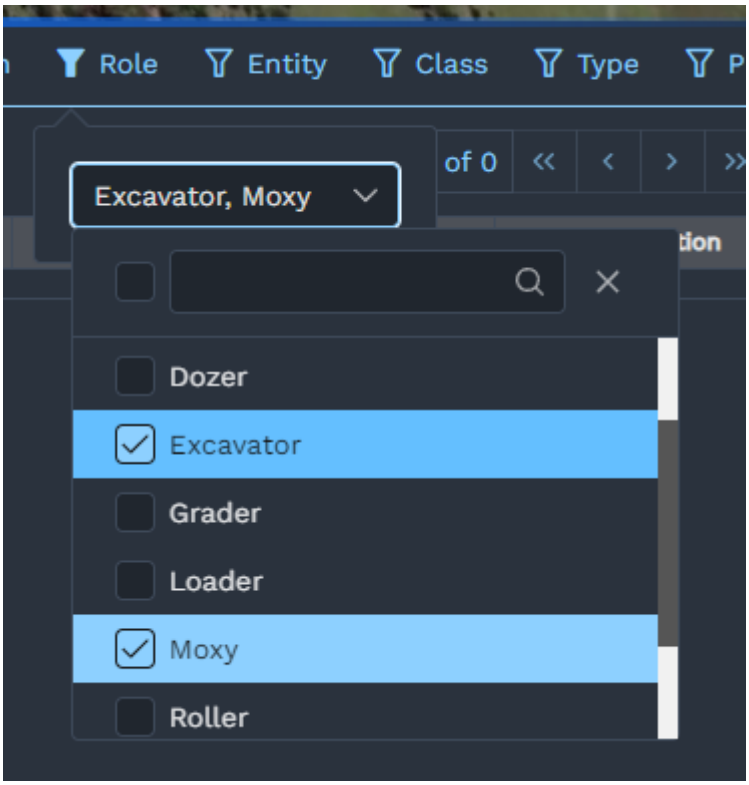
Table Viewer

Underneath the map is the table view. To select a tab, click on the dropdown in the left corner underneath the table divider.

The table view can be resized as needed by dragging the table divider.

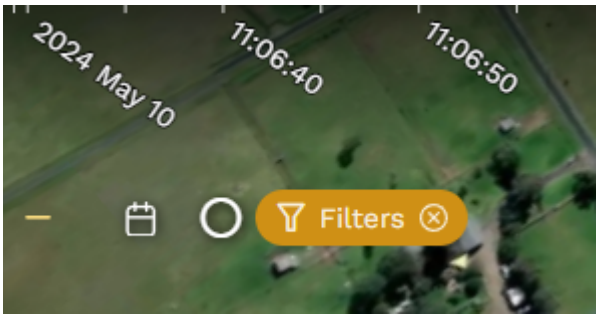
Filters

You can filter resources on the map to only show what you're interested in using the filters. On the right hand side of the table view, you can find the filter options. Click on a filter to open a dropdown and select what you're interested in.

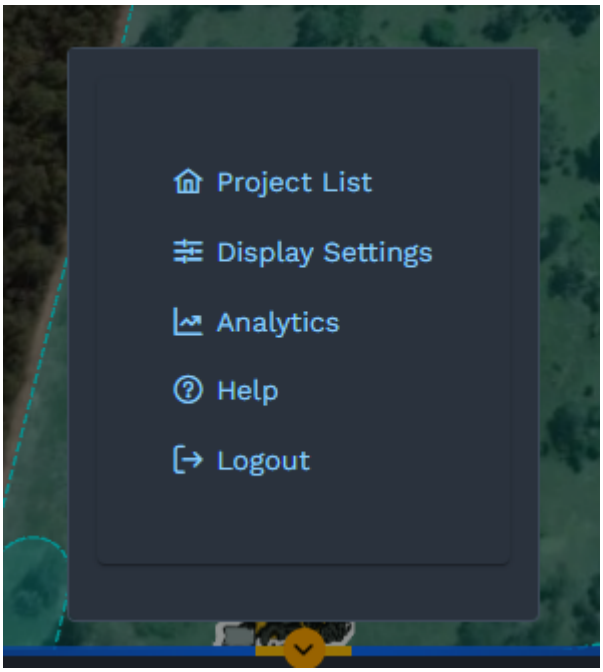


Alternatively, you can apply a filter by clicking a resource on the map and choosing the filter from there.

To quickly clear all filters, click on the 'X' next to the filters chip in the top left hand corner of the screen.



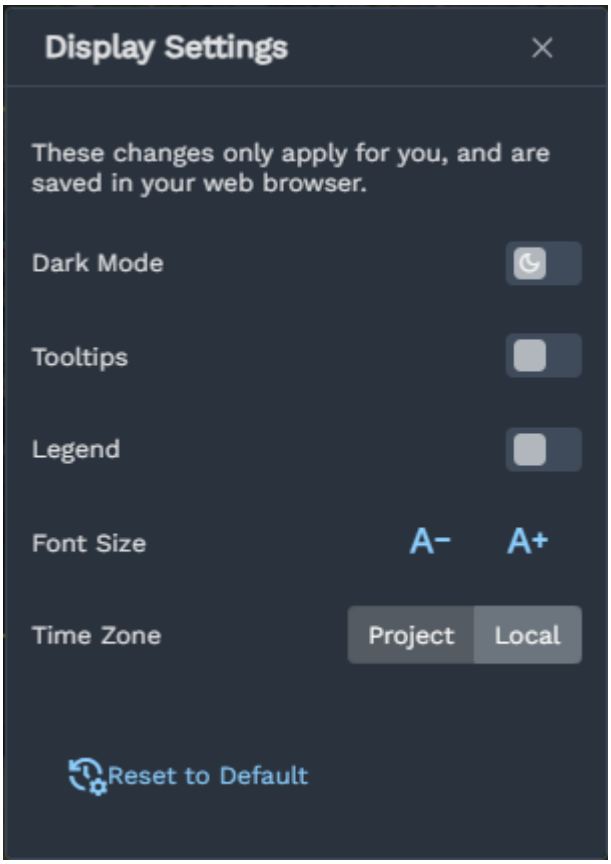
Main Menu



Click the = icon in the bottom left hand side of the table view to open the main menu.

The Main Menu allows you to switch between projects, customise the SMART interface, or explore analytics for the selected project.

Display Settings



The display settings pane in the Main Menu has some helpful features to adjust the interface:

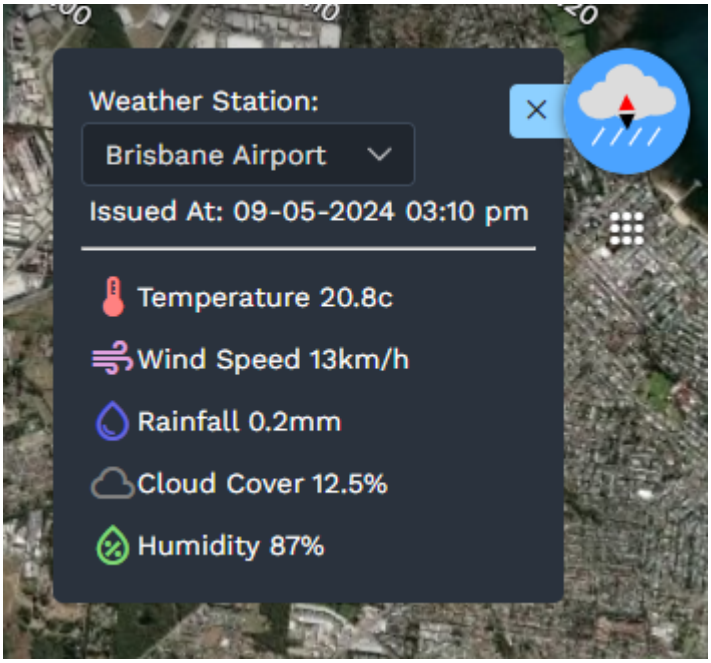
- Appearance: Switch between dark and light colour schemes for the interface
- Tooltips: Toggle tooltips when hovering over buttons
- Legend: Toggle to display the legend on the map
- Font Size: Adjust the size of text in the interface
- Time Zone: By default, SMART displays timestamps based on the project location. If preferred, you can show times based on your local timezone.

Analytics View

The Analytics view in SMART provides a range of dashboards to gain a high-level overview of the project. This will be covered in-depth later in this guide.

Weather

SMART includes real-time weather data. You can see the current weather conditions in the top right corner of the map view.



Click on the < in the blue tab to view more weather details.

Timeline

Live Mode

While in Live mode, resources on the map will automatically update to their most recent location as soon as data comes in. Resources which are not currently active will appear grayed-out at their last known location.

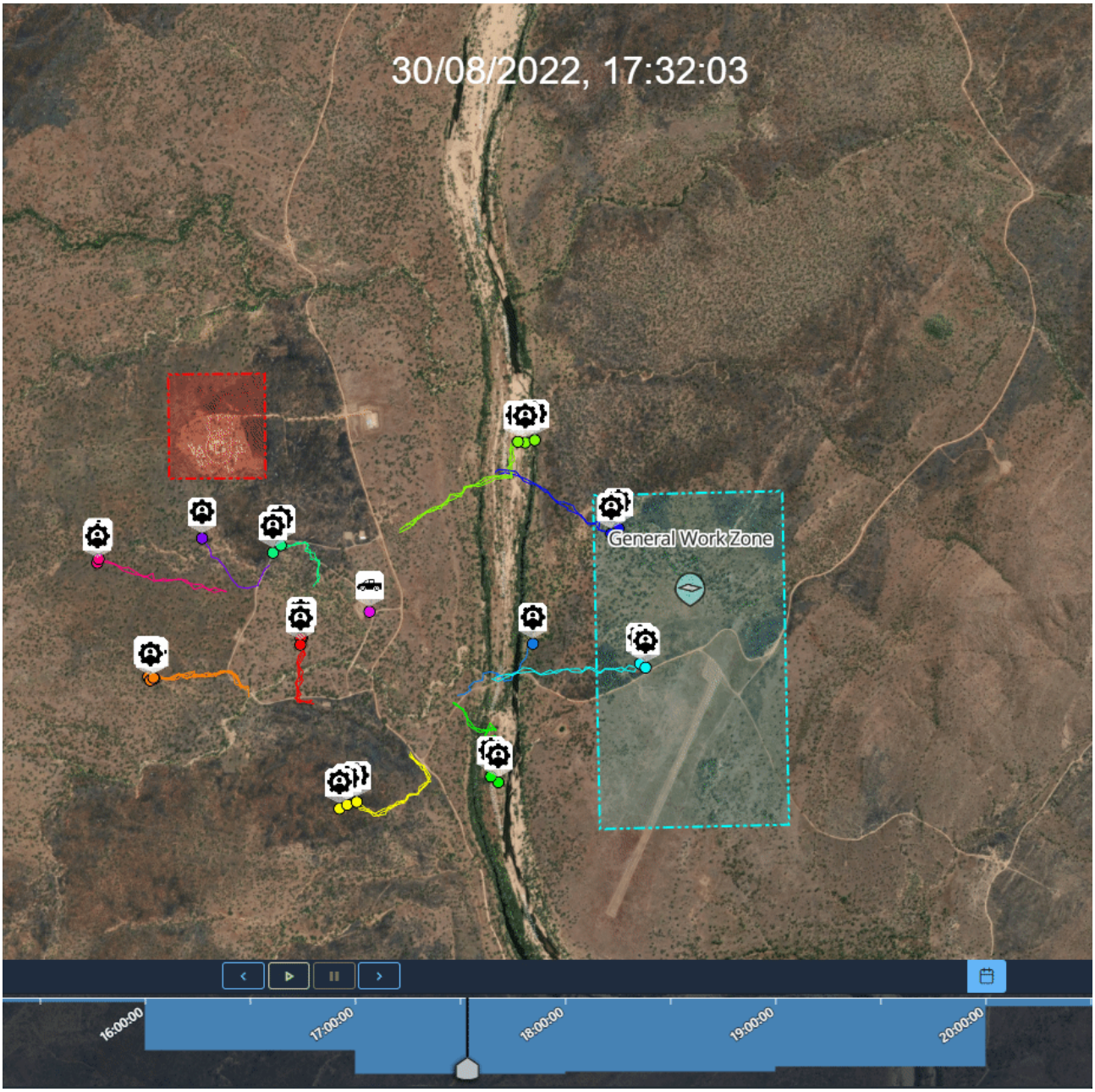
Live mode is locked to the current time. To explore resources in the past, switch to Historic View.

Historic Mode

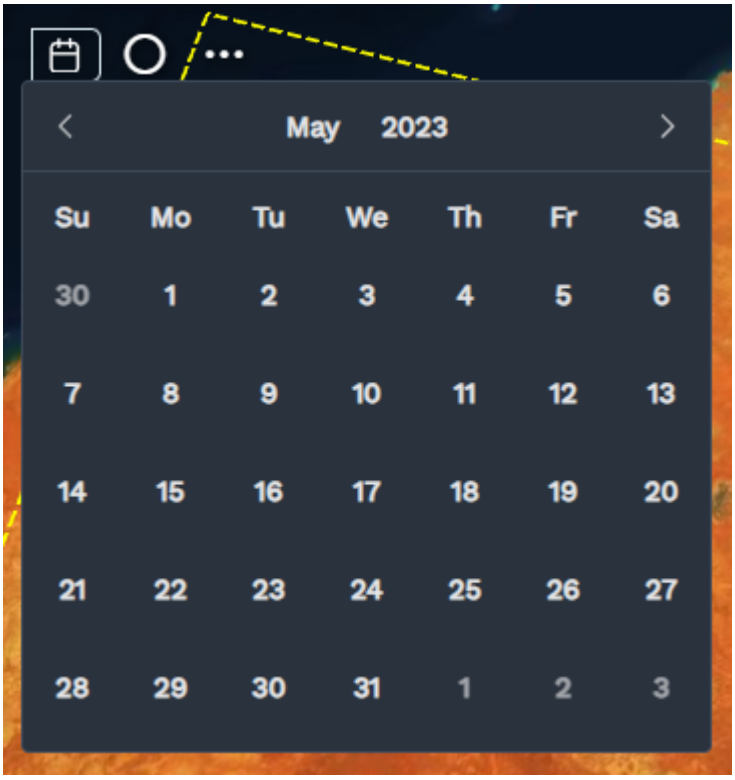
Historic View provides visibility of the historical location data of resources, and allows you to explore the project site as it was at any point in the past.

When viewing the timeline in Historic mode, a bar chart will be displayed indicated the relative activity during the time period.

To view a different point in time, click and drag the cursor along the timeline. You can use the scroll wheel to zoom in and out on the timeline.



To jump to a different date click on the calendar icon in the top left and select the desired date.



To start animating through time, press the ▶ Play button. To stop the animation, press the ⏸ Pause button.

Window Mode

Window View shows all locations covered by resources in a specified window period. In Window View, the points displayed on the map are based off all the data collected during the window selected on the timeline.

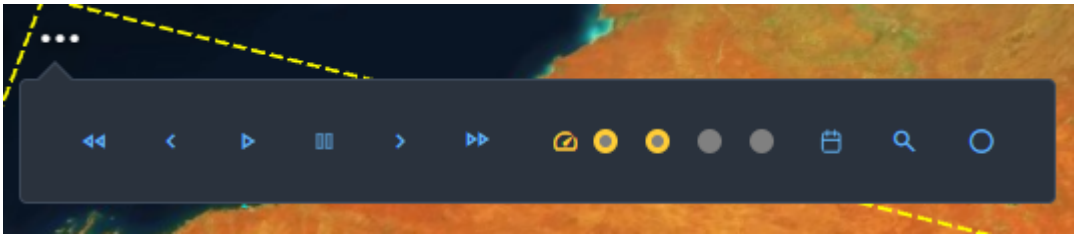
Window View is a powerful tool for assessing the past performance of projects. In Window View, you can visualise all past locations of resources to identify areas of high activity; or view animations tracking individual resources through time.

To adjust the time period of interest, simply click and drag either end of the window.

To view an animation of the resources, press the ▶ Play button. While animating in window mode, the timeline will be locked in place. The animation will only loop through the time period within the window.

While animation mode is active, you can press ⏸ Pause at any time. While the animation is paused, you can use the and buttons to step through frames one at a time. To exit animation mode, press the ⏹ Stop button and the window will be unlocked.

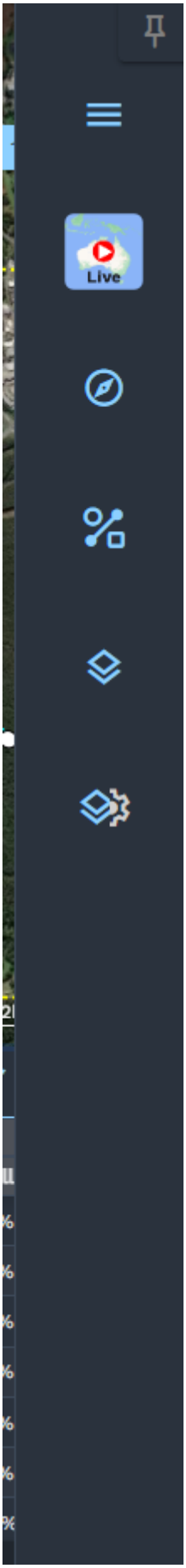
Playback Settings



You can adjust the speed of the animation within the playback settings menu.

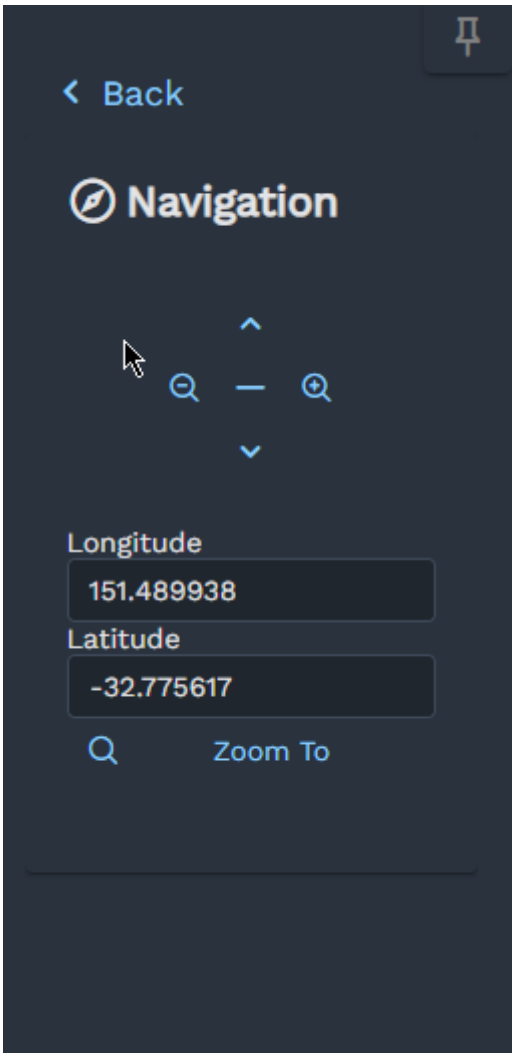
Map Tools

The Map Tools sidebar can be accessed by clicking on the button in the top right of the map view. This sidebar includes some powerful ways to work with the map; and options to configure what is visible on screen.


Live

- Main Menu: Open the main menu
- Mode Selector: Choose between live, historic, and window views
- Navigation: Display longitude and latitude and precisely navigate the map
- Drawing Tools: Measure distance or area, and create work/exclusion zones
- Layer Toggle: Switch between visual presentations of restricted zones, project zones, and resources
- Layer Settings: Toggle labels and styles for map layers

Navigation



The Navigation pane allows you to precisely navigate the map. The current longitude and latitude is displayed.

To jump to a precise position, update the longitude and latitude fields and then press ‘Zoom To’.

Drawing Tools

Drawing tools are divided into three sections: Measure, Selection, and Zone.

Measure

These drawing tools allow you to measure distances or areas.

Selection

These drawing tools allow you to mark out a temporary area of interest. SMART will then be filtered to only show data within that selection.

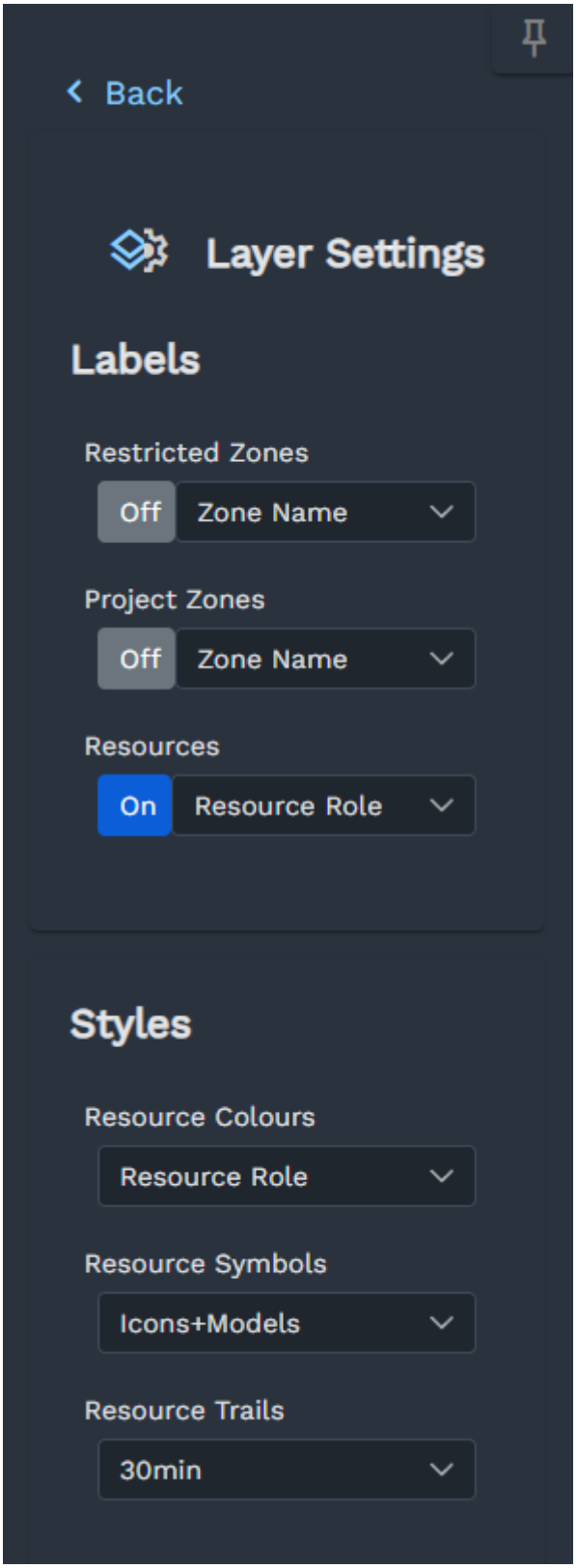
Zone

These drawing tools allow you to easily create a new Work Zone or Exclusion Zone .

Layers

Each map layer can be turned on and off within the layers menu.

Layer Settings



The Layer Settings menu allows you to customise how the map is displayed.

Labels

Labels can be turned on and off for zones and resources. By default, resources are labelled with their role.

Resource Colours

By default, each resource is assigned a colour based on their role.

Resource Symbols

When zoomed out, SMART will display an icon for each resource. As you zoom further in, these icons are replaced with 3D models. These models help provide greater context when looking at you site. However, on lightweight devices they may be taxing. You can disable 3D models in this menu.

Resource Trails

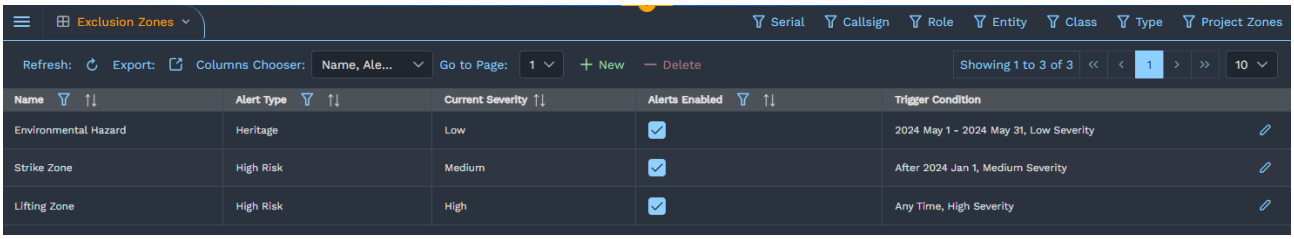
When a resource moves, SMART produces a coloured trail behind it. You can adjust the length of the trail from this menu.

Exclusion Zones

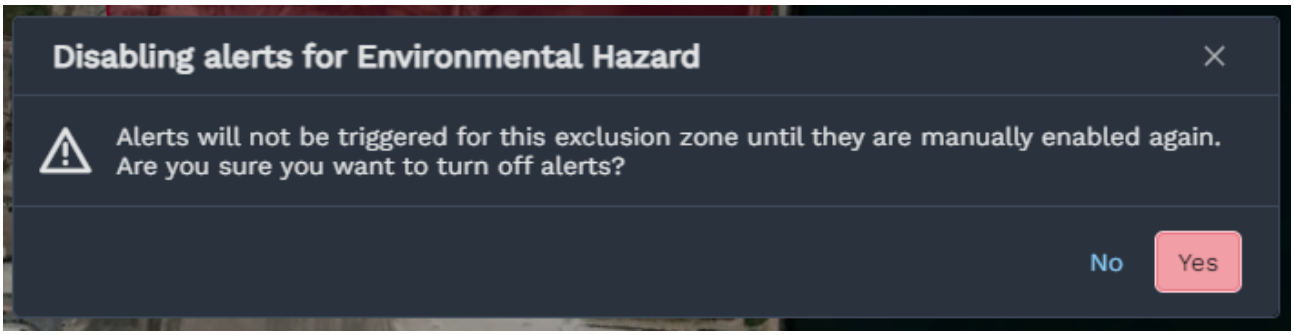
Exclusion zones can be used to mark out high-risk areas, cultural heritage sites, or environmentally sensitive areas. SMART can be configured to automatically trigger alarms or send alerts when devices enter an Exclusion Zone.

Table

The Exclusion Zones table shows all areas currently setup for this project.

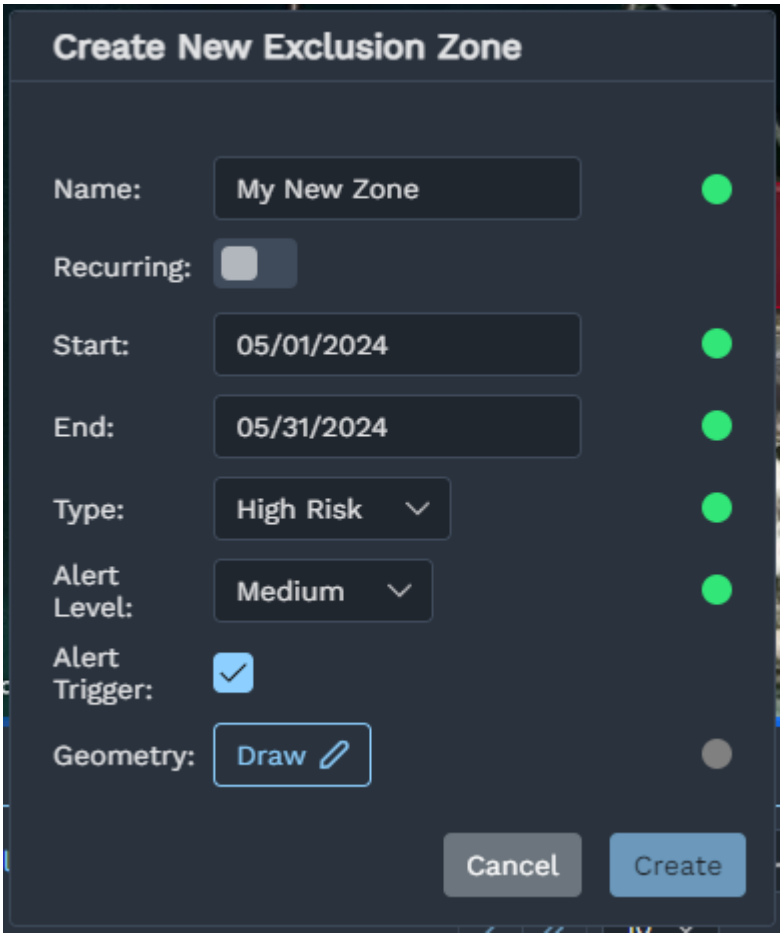


If you need to temporarily turn off alerts for a zone, you can uncheck the Alerts Enabled box.



Creating a Zone

To create a new exclusion zone, click the '+ New' button at the top left of the table. Fill in the details in the dialog.



To start drawing an area on the map, click the 'Draw' button. Click each point on the map in order to make a polygon shape. Press enter or click on the first point again to finish the area. Once the area has been drawn, press 'Create' to finish your new exclusion zone.

Exclusion zones can also be created through the drawing map tools .

Breach Alerts

SMART can be configured. See the Alert Management tab in SMART to configure who is subscribed to notifications for exclusion zone breaches.

Breach History

A comprehensive record of exclusion zone breaches can be found in the *Exclusion Logs* tab.

Exclusion Rules

If you only want certain types of resources to trigger alerts, you can configure more complex rules for a zone.

Zones with multiple rules will be coloured on the map with their highest active severity.

Alarm Buzzer

Certain SMART tracking devices have an in-built alarm. If these devices breach an exclusion zone, the alarm will be triggered. This produces an audible warning to notify the worker that they need to exit the area.

Workzones

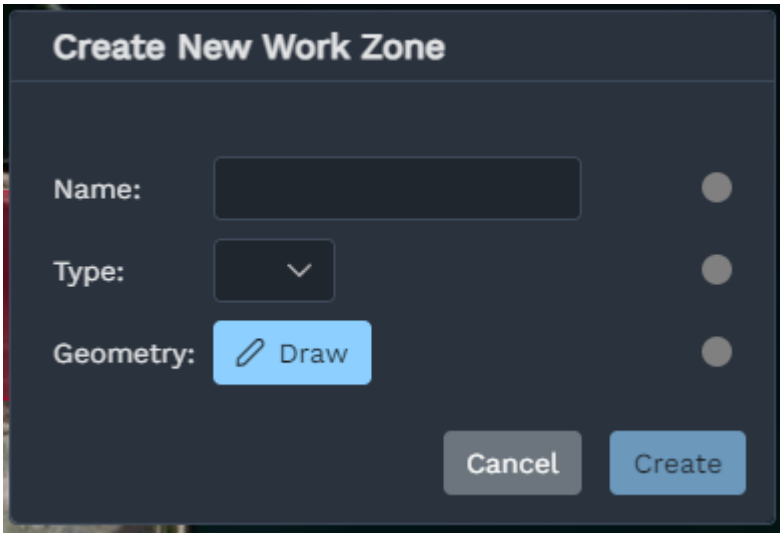
Workzones in SMART are used to track where work should be being completed. Workzones can be linked to your project schedules, enabling powerful productivity insights and real-time notifications when things might be going off-track.

Note

For best results, map out as many areas as possible. Creating zones for stockpiles, laydowns, and access points can help SMART give you better insights into how people & plant move around your project.

Creating Workzones

To create a new work zone, click the '+ New' button at the top left of the table. Fill in the details in the dialog.

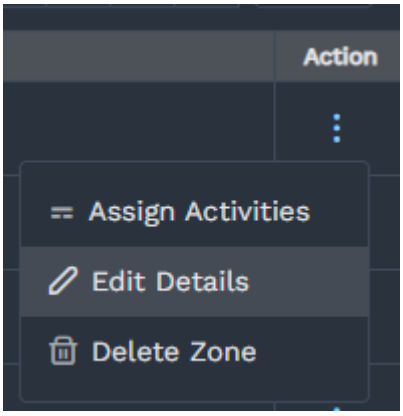


To start drawing an area on the map, click the 'Draw' button. Click each point on the map in order to make a polygon shape. Press enter or click on the first point again to finish the area. Once the area has been drawn, press 'Create' to finish your new work zone.

Workzones can also be created through the drawing map tools .

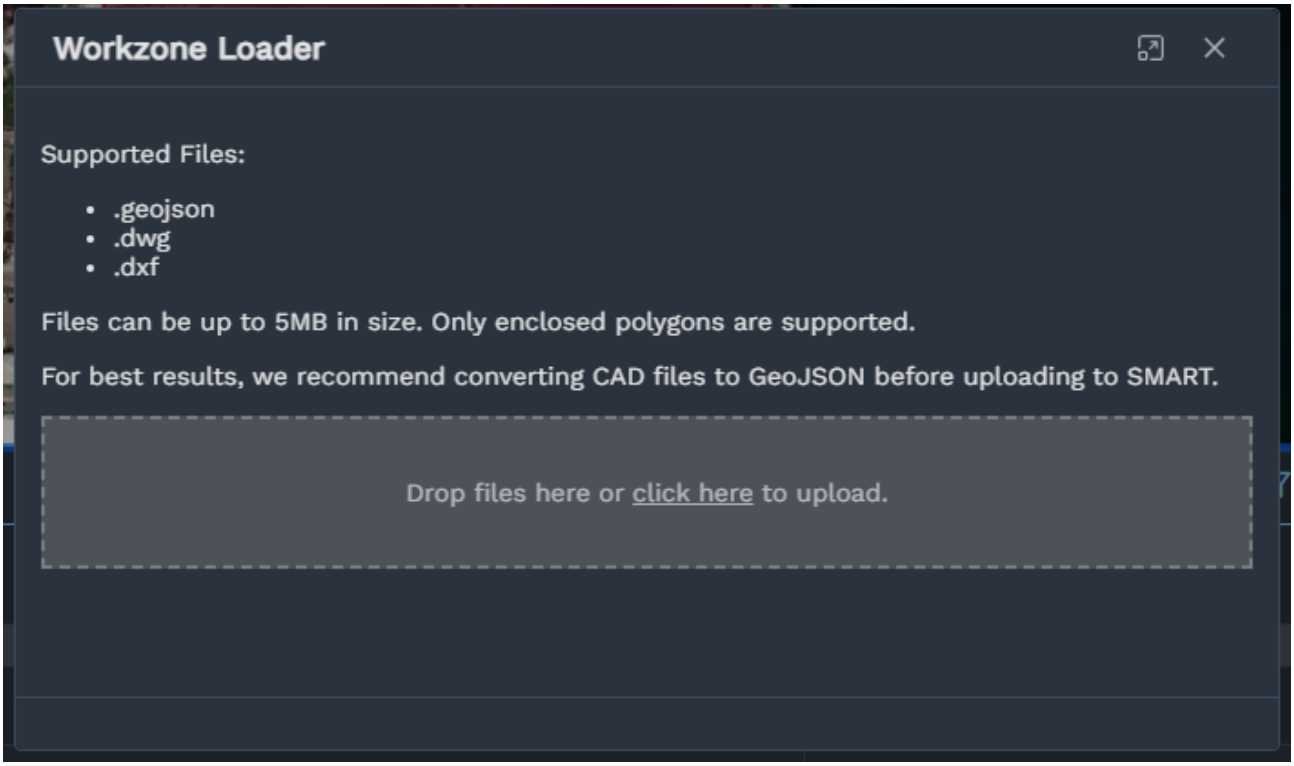
Editing Workzones

In the workzones table, select the ⋮ on the right hand side of the row you wish to edit, then click 'Edit Details'.

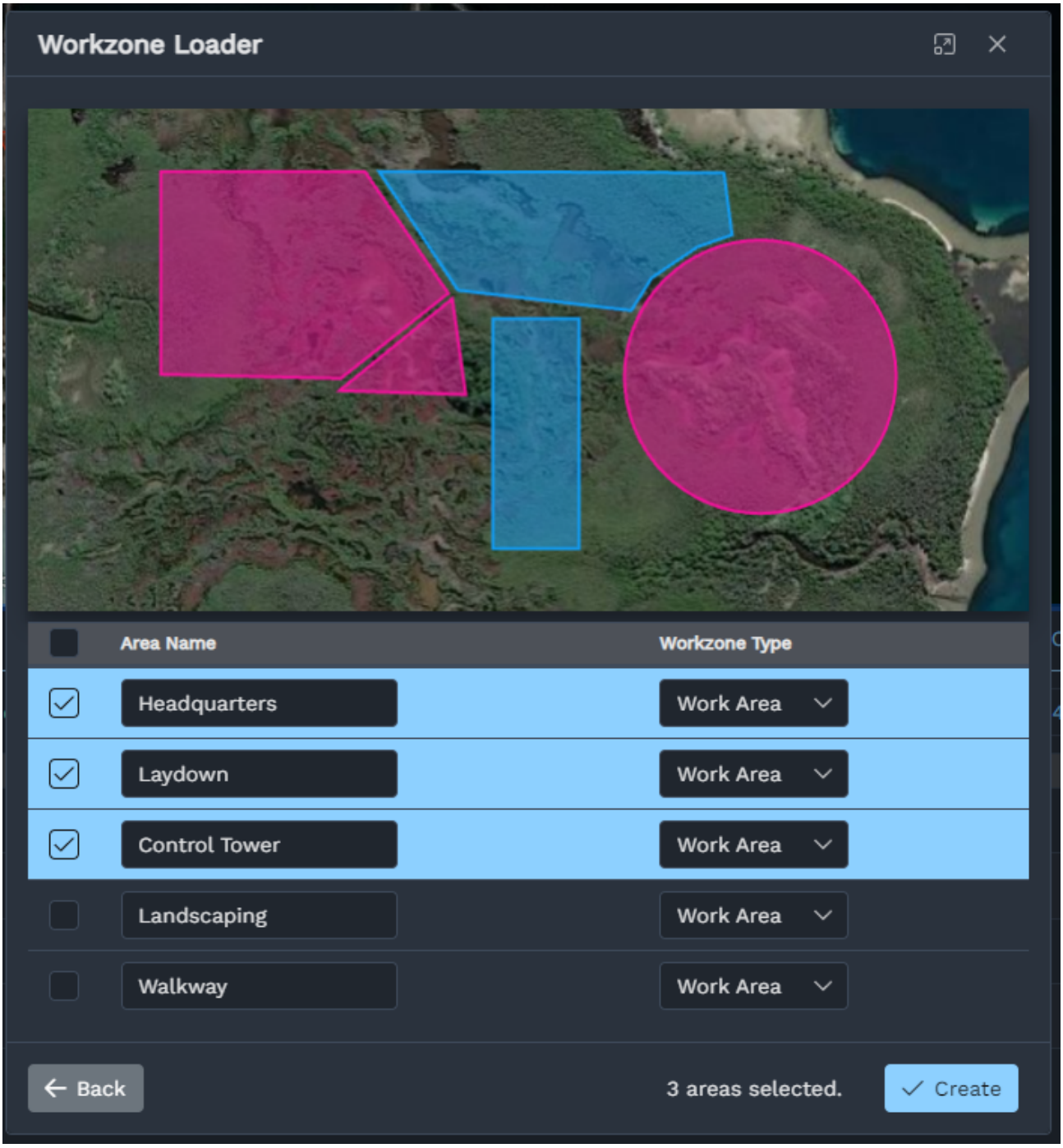


Uploading Workzones

If you have a spatially referenced file or CAD diagram, you can import workzones from that. Select '⋮ Actions' at the top right of the table and click 'Upload File'.



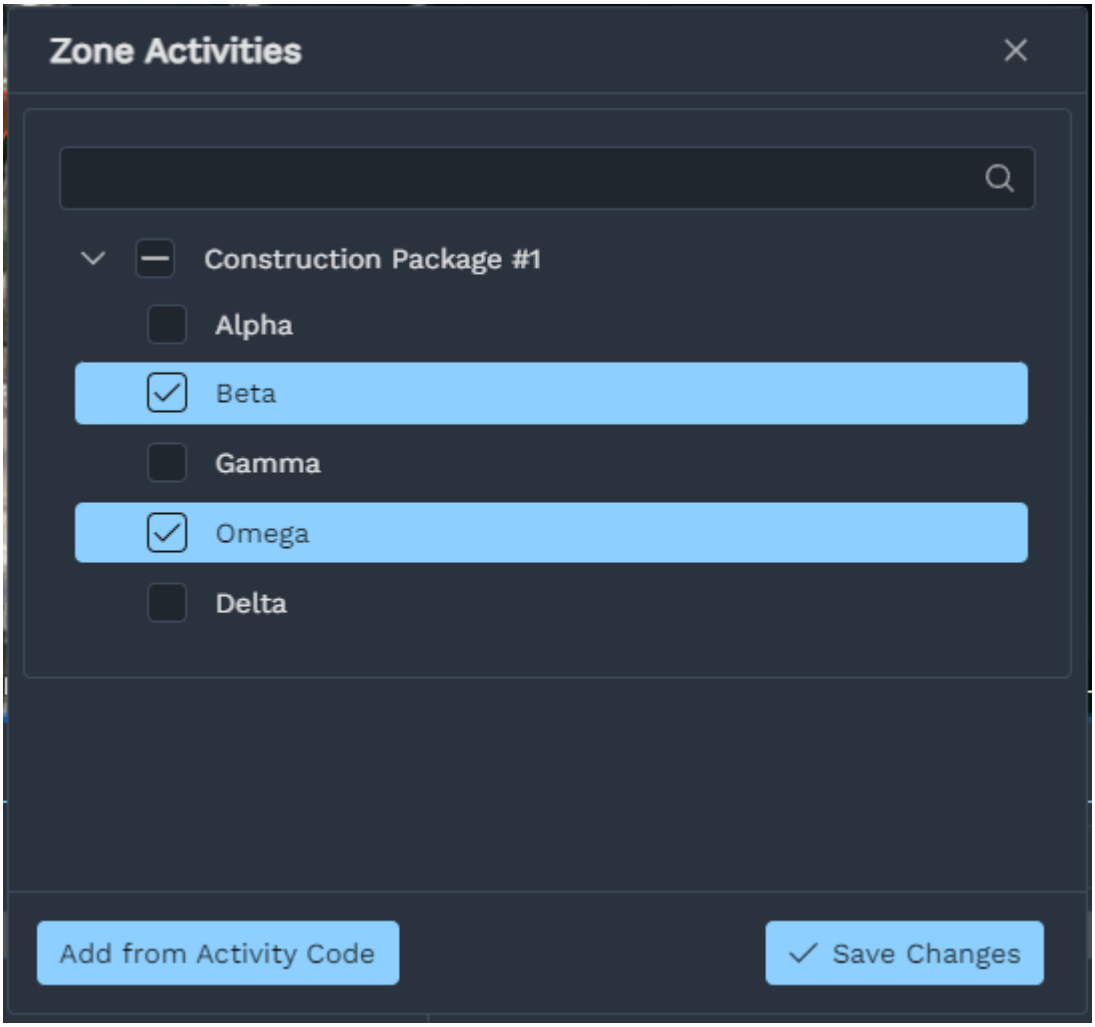
Once the file has been uploaded, select the areas you would like to import and click 'Create'.



The Workzone File Uploader is currently in *Beta* . Some CAD files might have difficulty importing into SMART. If you encounter problems, please contact us for support.

Activity Assignment

Workzones can be assigned to activities in your project schedule files. Similarly to editing a workzone, click the ⋮ on the right hand side of the row you wish to edit, then click 'Assign Activities'.

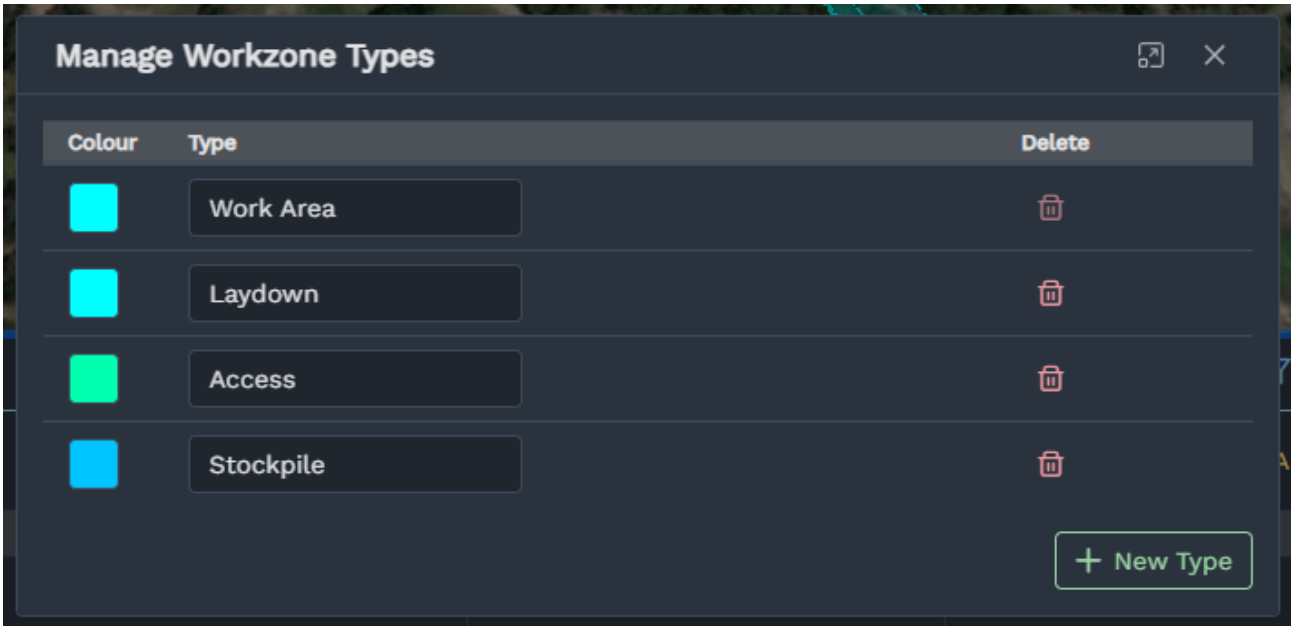


Select all activities which should be assigned to the zone, and press ‘Save Changes’.

Instead of selecting schedule activities manually, you can also add all activities with a certain activity code to a zone at once. Click ‘Add from Activity Code’ and select the activity code. All tasks matching this activity code will then be associated with the zone.

Workzone Types

SMART comes with a few default workzone types for you to get started with. If you need to customise these, select ‘Actions’ at the top of the workzone table and then ‘Manage WZ Types’.



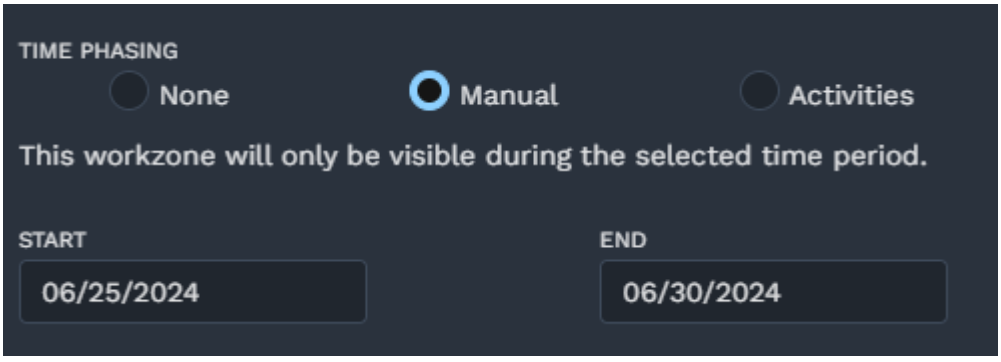
You can rename workzone types, or adjust the colour they are displayed with on the map.

Note

Workzones are designed for productivity tracking. If you want to mark out areas when resources are prohibited from entering (such as safety zones or heritage areas), you should instead create an Exclusion Zone and setup breach alerts.

Time-Phased Workzones

Workzones can be set to time-phased - only active during a specified time window.



You can pick between the following options when editing a workzone:

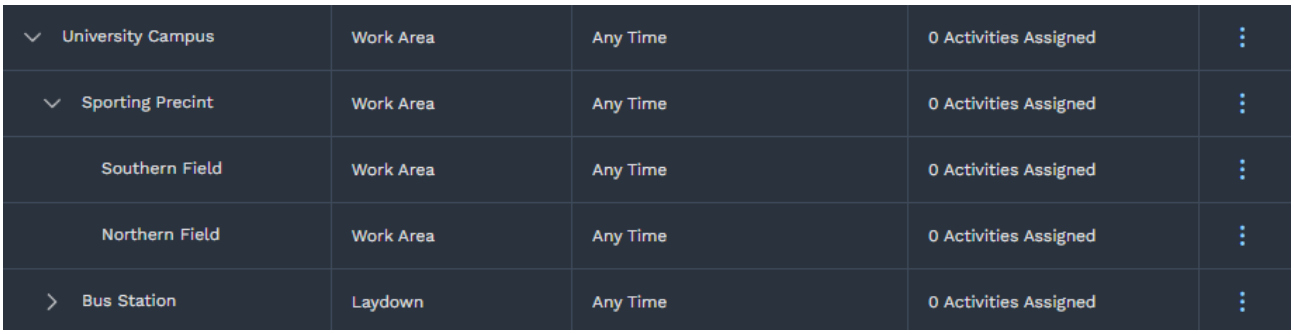
- None: This workzone will always be displayed on the map.
- Manual: This workzone will only be displayed on the map during the range you specify.
- Activities: This workzone will only be active during the range of assigned activities. This workzone will only show up after the first task commences and before the final task finishes.

Nested Workzones

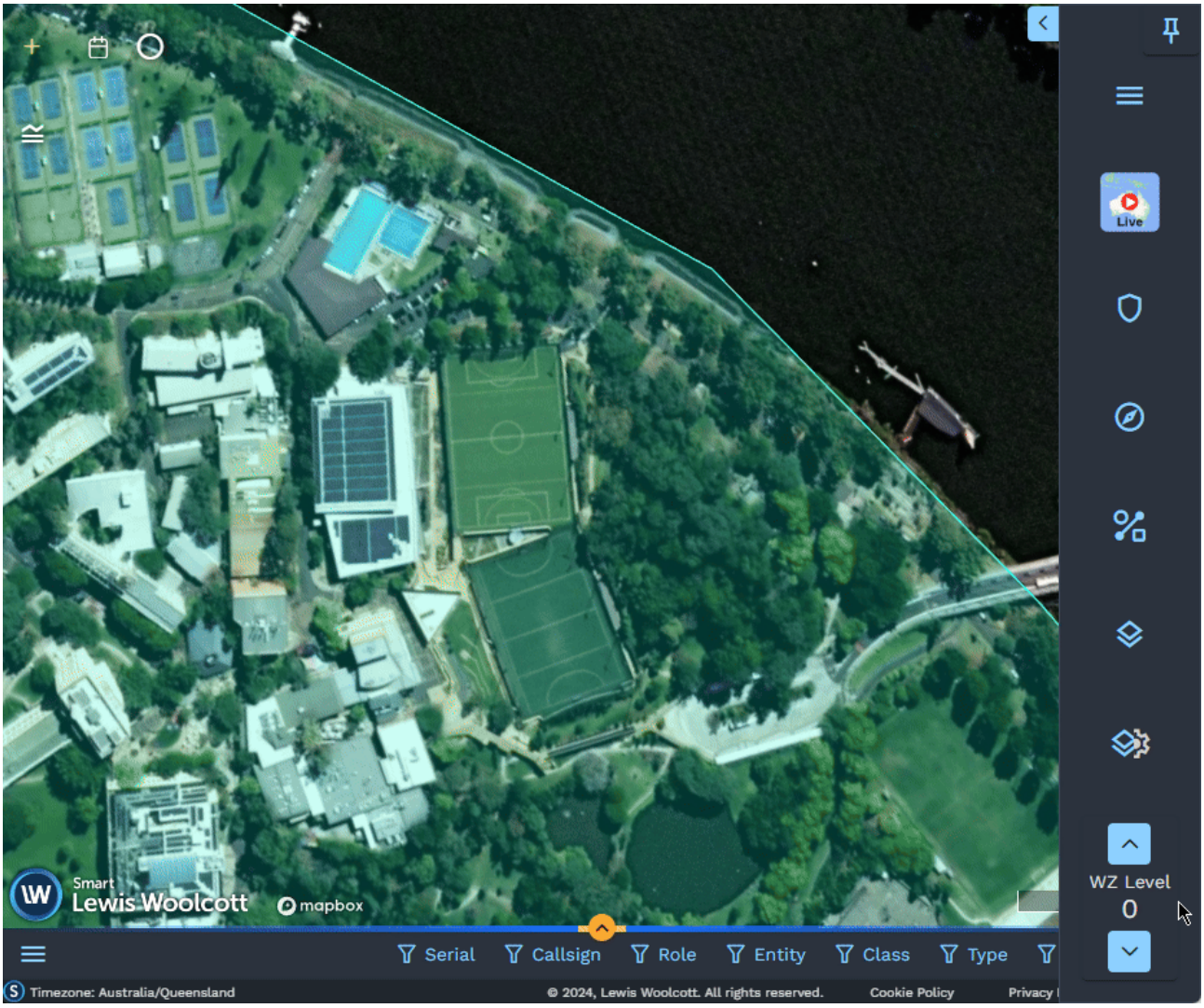
For more complex projects, you can put workzones inside of other workzones. You might want to mark out broad regions corresponding to phases of the project, while still tracking individual work areas inside a region.

When creating or editing a workzone, you can select a 'Parent Workzone'. The workzone is then treated as being a smaller part inside of the parent zone.

Click on the arrows next to a zone to expand it and see child zones.



In the map tools menu, there is a 'WZ Level' selector. This allows you to adjust the map view between the high-level workzones, or the more detailed areas. Click on the ▲ button to 'zoom out', and the ▼ to 'zoom in'.


Live
WZ Level
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Smart
Lewis Woolcott
mapbox
Serial
Callsign
Role
Entity
Class
Type
Timezone: Australia/Queensland
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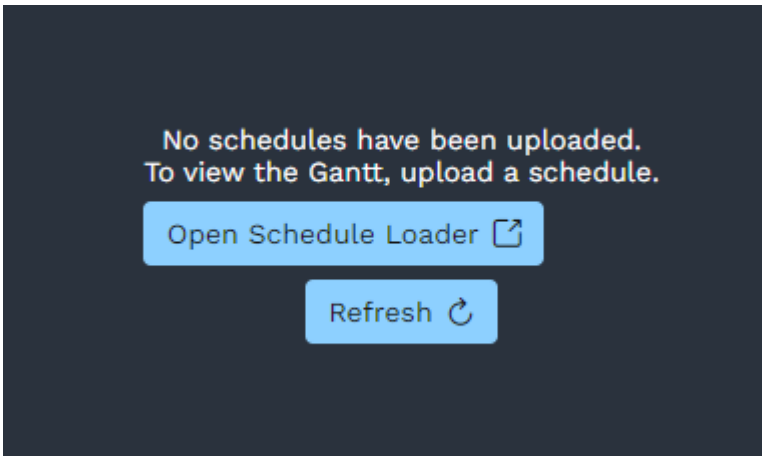
Schedule Analysis

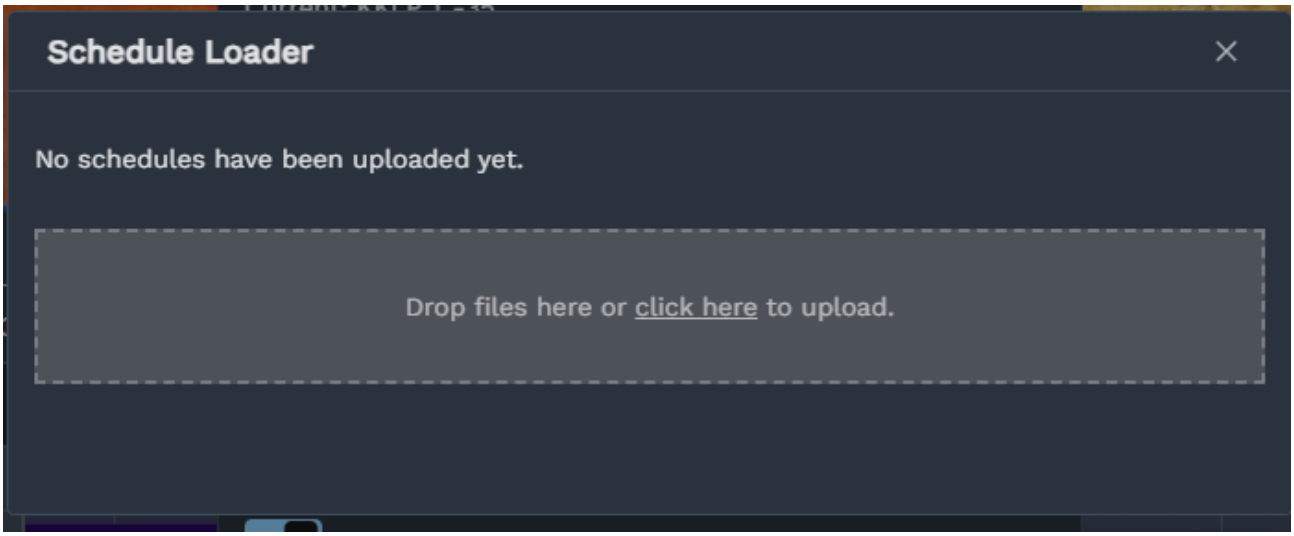
SMART comes with powerful schedule analysis tools which allow you to compare planned tasks with actual resource activity.

Uploading a Schedule

SMART supports XER files and MPP files. The first time you open the Gantt tab in SMART, you will be prompted to upload a new schedule.

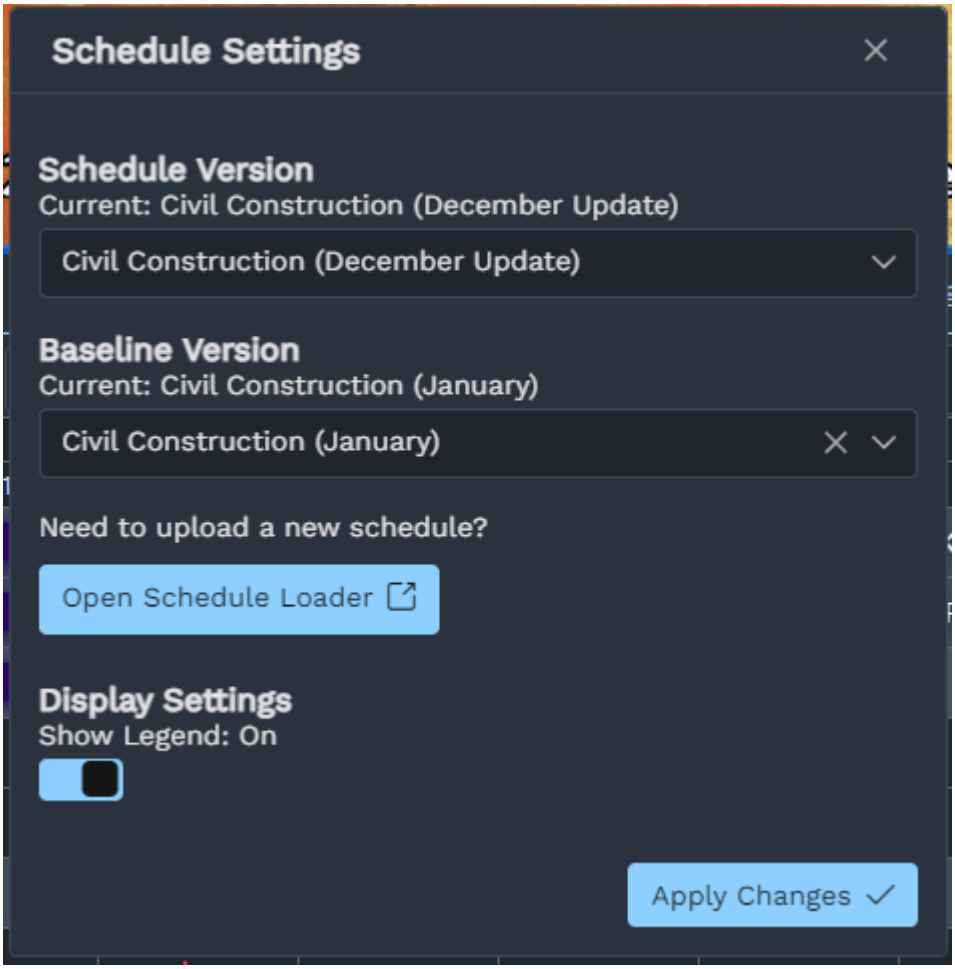


Click on the 'Open Schedule Loader' button to open the uploader. You can either drag and drop your schedule files onto the box, or click and navigate to the file in your file explorer.



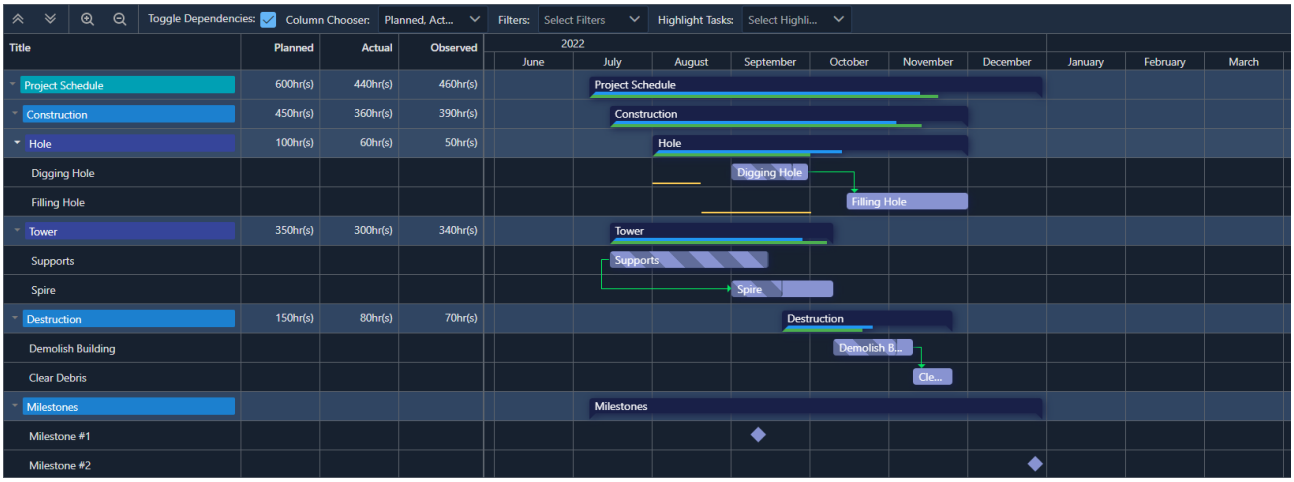
Managing Schedule Versions

To view a different version of the schedule, click on the gear icon in the top right of the Gantt chart. This will open up a dialog where you can choose between any schedules that have been uploaded to the SMART platform.



If you need to upload a new version, click on the 'Open Schedule Loader' button and repeat the above processs. Remember to upload all new schedule versions into the SMART platform!

Schedule Viewer



The Gantt chart in SMART has been designed to feel intuitive if you've used other project planning software in the past.

- Tasks are displayed as indigo bars.

- Baselines are displayed as thin yellow bars underneath.
- WBS levels are shown as dark coloured bars.
- Relationships are shown as green lines.

To move around the Gantt chart, click and drag within the Gantt space on the right-hand side. Use the mouse wheel to scroll up and down the table.

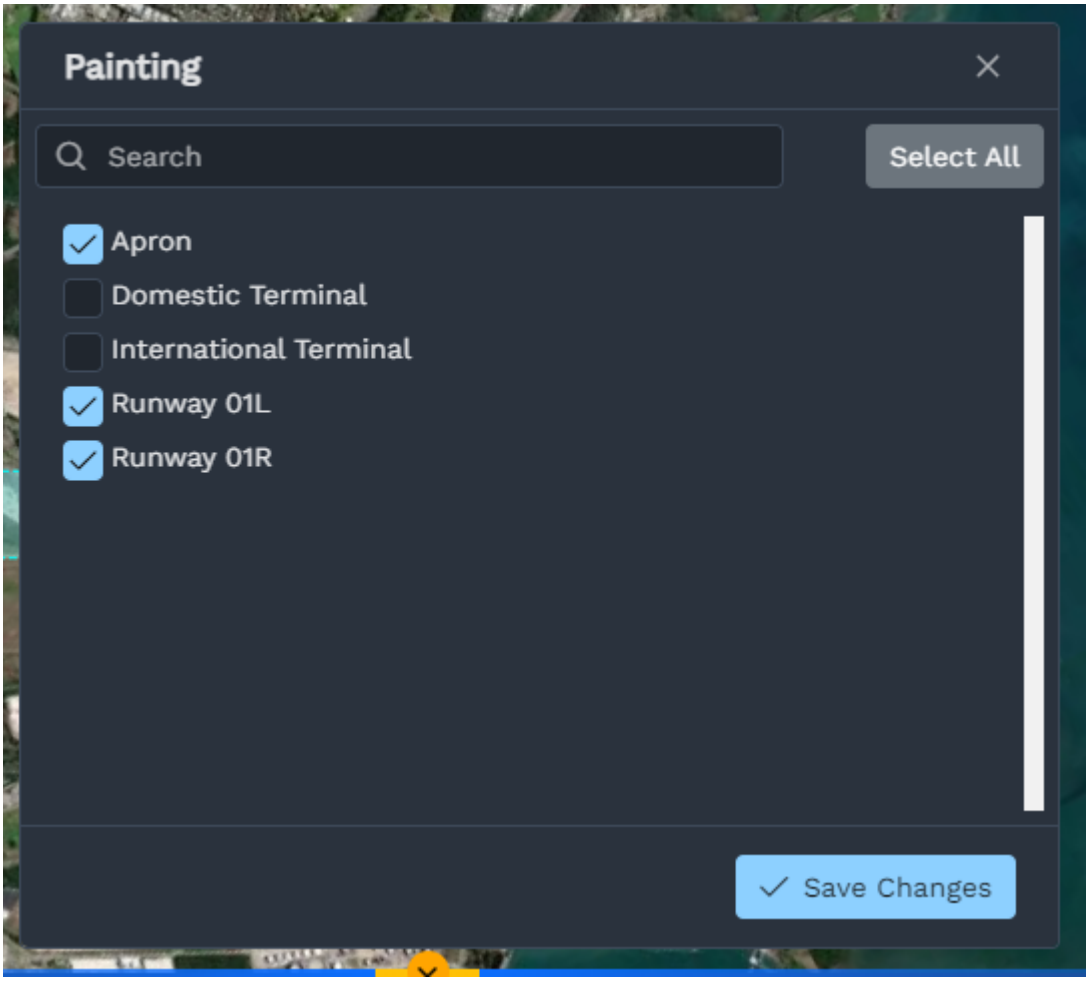
To zoom in, hold the CTRL key while scrolling. Alternatively, you can use the magnifying glass buttons in the top left corner.

Task Details

For full information about a task, right click and select the 'Task Details...' option. This popup will display all fields associated with the task, including resourcing and user defined fields.

Zone Assignment

To assign a specific task to areas on the map, right click and select 'Assign work areas'. Tick all areas that should be associated with this task, and select 'Save Changes'.



If you need to assign many tasks to a zone at once, you can do this through the Workzone Table .

What areas should I assign to a task?

Any area where you expect a significant amount of time will be spent working on the task should be assigned.

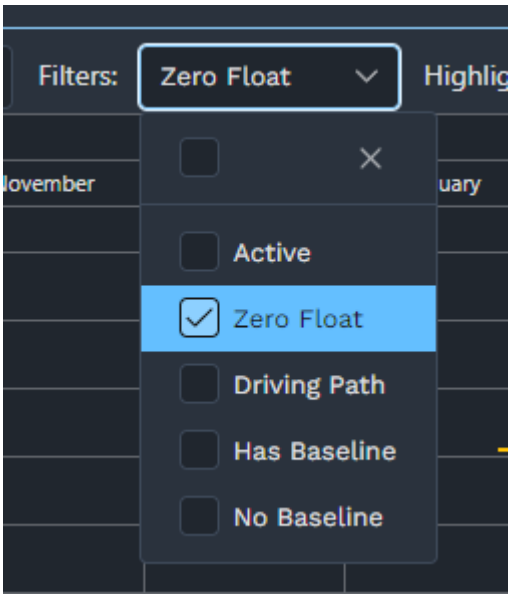
For areas like stockpiles, if a significant amount of time is expected to be spent loading at a stockpile, it should be assigned to the task.

SMART can break down the data by zone type and provide reports on where time is being spent.

Filtering

You can filter the Gantt to only look at certain tasks. For example, you might only want to show tasks that are currently taking place, or tasks that are on the critical path.

To apply filters, open the Filters dropdown on the top bar of the Gantt and tick the filters that you want.



The Gantt view is also linked to the Project Zone filters. If the map is filtered to a specific area, the Gantt chart will only display tasks associated with the selected area. This allows you to quickly produce a mini-Gantt for a specific area of the map.

<insert image/animation of filtering the schedule to a specific work area here>

Highlights

Instead of filtering, you can alternatively highlight tasks that match a condition. Highlighted tasks will show up in a red colour instead of indigo.

Work areas assigned to highlighted tasks will be highlighted on the map. This allows you to locate areas on the map where work should currently be taking place, or keep an eye on locations that are on the critical path.

Alert Management

With SMART alerts, you can have confidence that your site is operating smoothly. When incidents do occur, you can review the data to gain a full understanding of what happened.

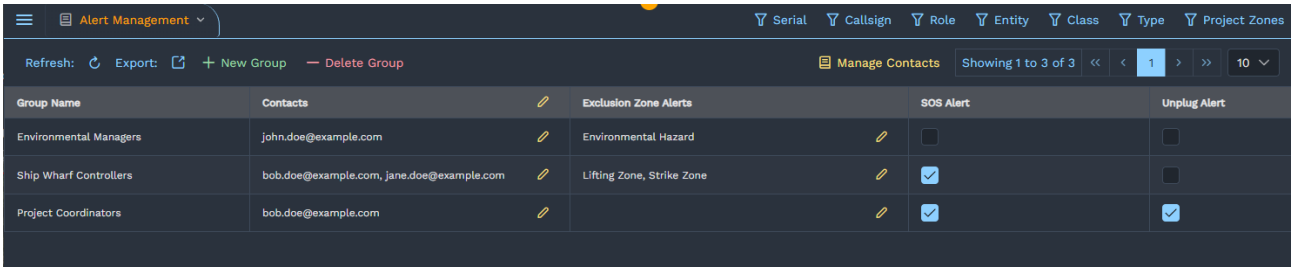
Events

SMART currently supports the following events for alert notifications:

- Breach Alerts: Occur when a resource breaches an exclusion zone .
- SOS Alerts: Alarms when a worker presses the SOS button on a compatible tracking device
- Unplug Alerts: Triggered when a tracking device has potentially been disconnected from a piece of equipment

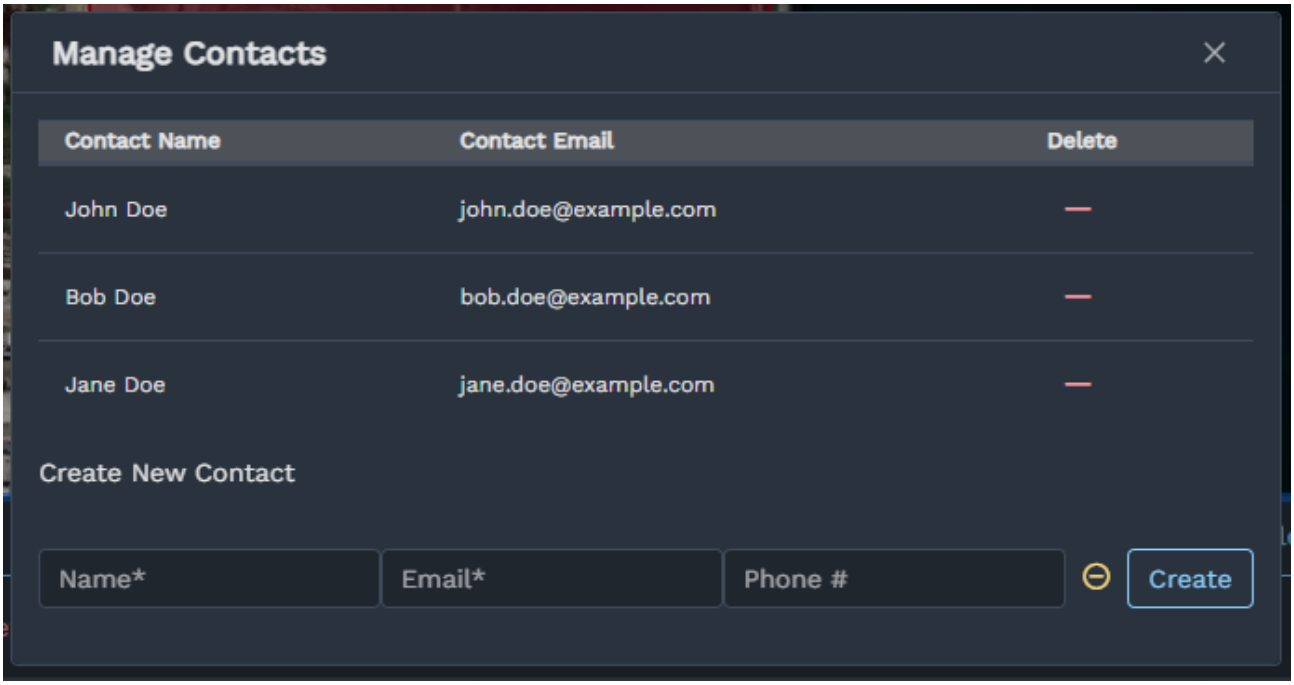
Alert Notifications

Alert notifications can be configured as part of the Alert Management table. Alerts are configured as groups of contacts, where each group is subscribed to specific alerts.



Contact Management

To manage contacts, click on the ‘Manage Contacts’ button at the top of the table. This dialog shows a list of all current contacts. You can add a new contact at the bottom of this dialog. Contacts will **not** get access to the SMART platform unless they are also registered as a user. You can add as many alert contacts as you need.



Alert Groups

Once contacts have been registered, they need to be assigned to an Alert Group. Each group can be configured to get different types of alerts, or alerts from specific exclusion zones.

Click on the '+ New Group' button to create an Alert Group.

In each row, click on the pencil icon in the Contacts cell to assign contacts to that group.

To assign zones to a group, click on the pencil icon in the Exclusion Zone Alerts cell. When a breach occurs in an assigned exclusion zone, all contacts in the alert group will receive an email notification.

Groups can also receive SOS alerts of Unplug alerts. To toggle whether a group receives these alerts, simply click the checkbox in each row.

Alert History

Even if email notifications are not configured, SMART keeps a comprehensive record of all events on site. You can go back through the event history at any time. This can be used to gain a full understanding of site conditions when a potentially hazardous event occurred.

Breach History

A record of all exclusion zone breaches can be found in the *Exclusion Logs* tab.

Double-click on a row in the table to rewind SMART back to when the breach occurred.

SOS History

A record of all SOS occurences can be found in the *SOS Alerts* tab.

Similarly to breaches, you can double-click a row in this table to rewind SMART back to the moment the SOS occurred.

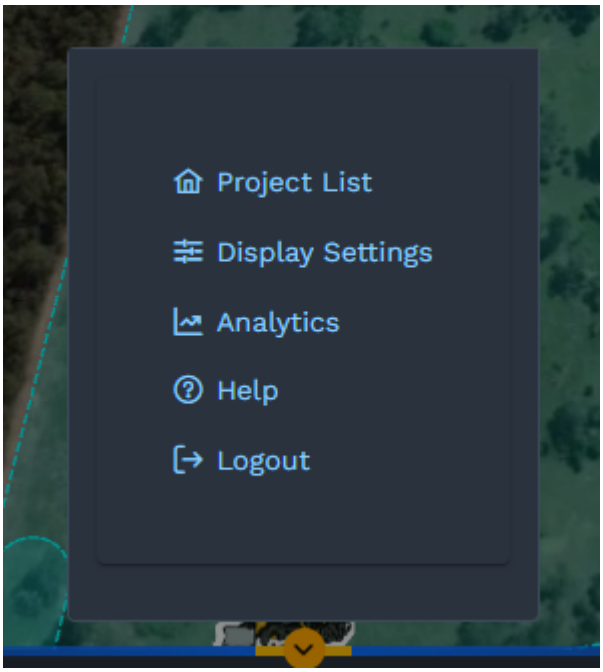
Analytics

Analytics

SMART comes with a wide range of built-in analytics reports, allowing you to get the most out of SMART and manage your construction projects more efficiently.

We're constantly working on new analytics solutions to make your life easier. Have some analytics work you need done? Get in touch with us at support @ lwanalytics . com .

Accessing the Analytics View



Open the Main Menu in SMART and select 'Analytics' to go to the Analytics Explorer.

Navigating Analytics

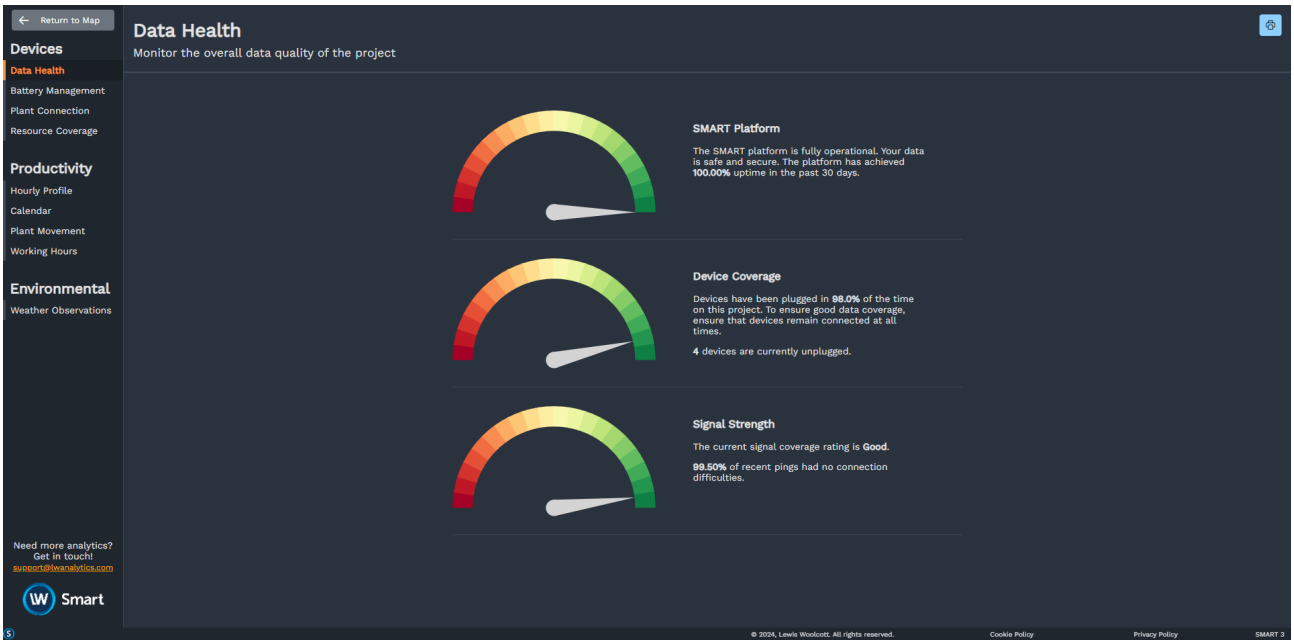
The SMART Analytics view consists of multiple independent dashboards. A list of all dashboards can be found on the left hand side of the analytics view. Click a tab in the sidebar to switch between different analytics dashboards.

If you want to return to the SMART Map view, click on the button at the top of the navigation sidebar.

Data Health

Data integrity is a shared responsibility between SMART and your project team. We will keep your data safe and secure, but it is important that you ensure all SMART tracking devices are in ideal operating conditions.

As part of our Analytics view in SMART, we provide a Data Health dashboard to help you keep an eye on key metrics.



SMART Platform

The SMART platform is designed to keep your data safe and secure. Your project data is encrypted at rest and in transit, and is kept seperate from other projects.

SMART has redundant infrastructure and active monitoring in place, which has allowed us to achieve more than 99.99% uptime.

Signal Strength

SMART devices require cellular coverage to upload data to our platform. If a device has no signal, it will hold onto data and upload it once it is back in range. To guarantee real-time insights in the SMART platform; ensure that your site has good cellular coverage.

If you need to improve coverage on your site, contact us to discuss solutions such as our SATUTE .

Device Coverage

SMART can only provide insights where trackers are operating – for best results, ensure that all your site resources are equipped with trackers.

You can setup Unplug Alerts within the SMART platform to get automatic email notifications when a device is unplugged. Our plant trackers have a small backup battery which ensures data is collected for a brief period even if a device is unplugged, but it is important to act to reconnect devices as quickly as possible.

Resource Metrics Table

The Resource Metrics Table is a special analytics view, and will be the first thing you see when opening up an ongoing SMART project.

Planned vs Actual

Planned vs Actual involves comparing the planned timeline of a project with actual work undertaken. SMART provides real-time productivity insights, and enables you to identify potential delay risks and take action before they impact project timelines.

In SMART, we use the following terms to refer to different kinds of progress:

- **Planned** : The initial hours assigned to a schedule task
- **Recorded** : Actual hours recorded as complete in the schedule
- **Observed** : Hours tracked by SMART devices

Gantt View

Planned, Recorded, and Observed hours are tracked at a WBS level in the Gantt view in SMART. Recorded and Observed hours are displayed as green and blue bars underneath the bar.

Report Analytics

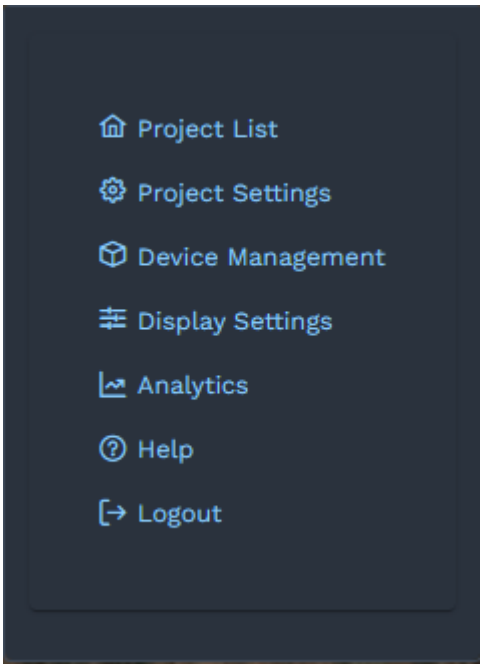
For high-level insights, there is a Planned vs Actual report as part of the Analytics pane.

Managing SMART

Managing SMART

While we endeavour to give you the best insights from SMART, it is important to keep the project details up to date. Most importantly, ensure that SMART devices cover all resources on site and that the resource assignments are updated if devices are transferred.

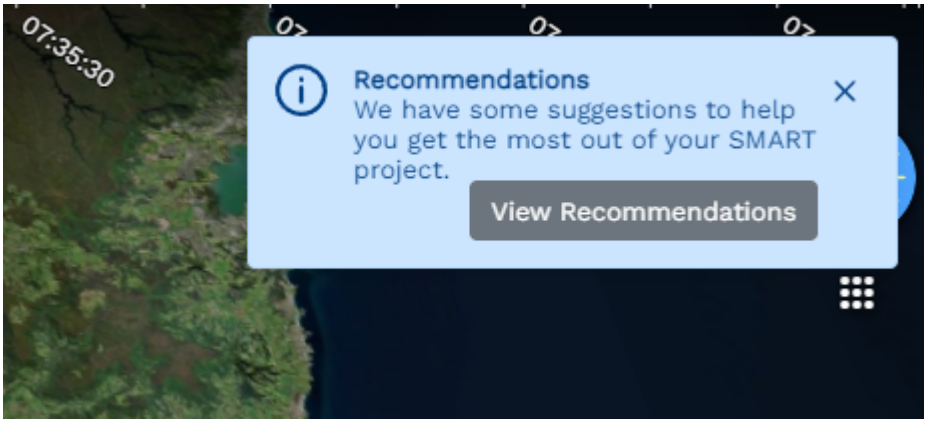
If you have permission to manage a SMART Project, you will have more options as part of the Main Menu:



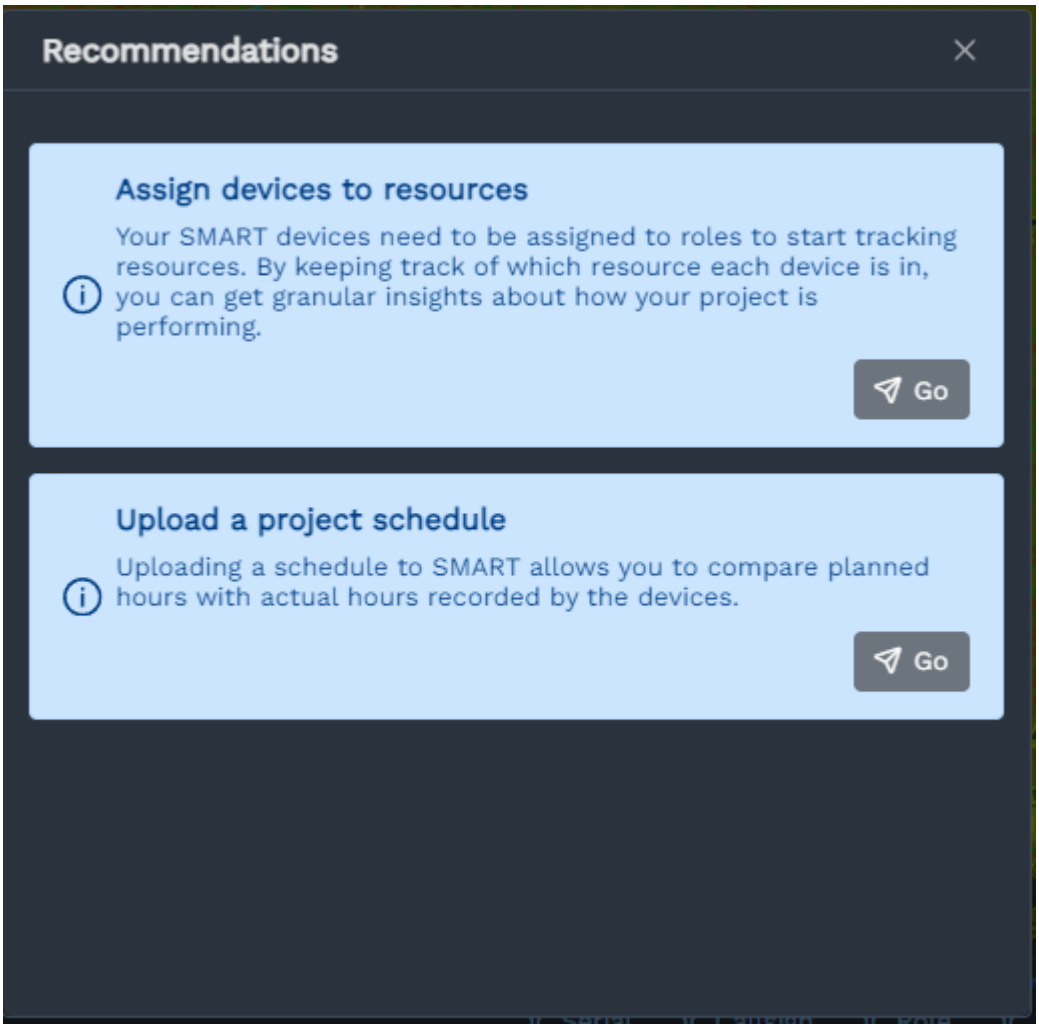
- Project Settings : Manage some general details about the project
- Device Management : Manage SMART devices and their resource allocations
- Recommendations: Check that your SMART project is configured to deliver the best insights

Recommendations

When setting up a new SMART project, you will see a notification in the top right corner.



This will bring you to the Recommendations screen, which provides guidance on what you need to do to get the most out of SMART. Click on any of the buttons to jump directly to the page.

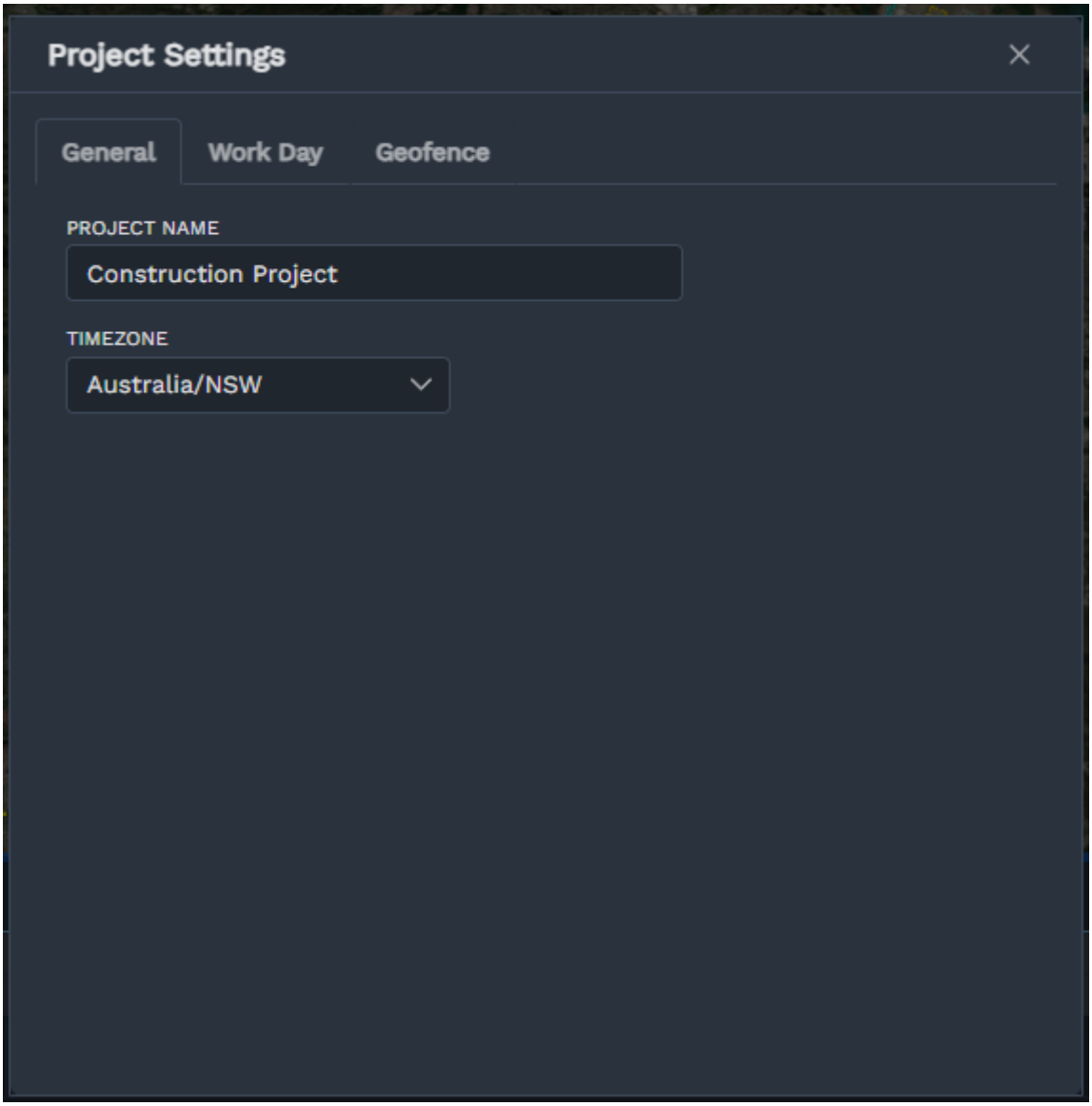


You can also check the recommendations at any time from the main menu.

Project Settings

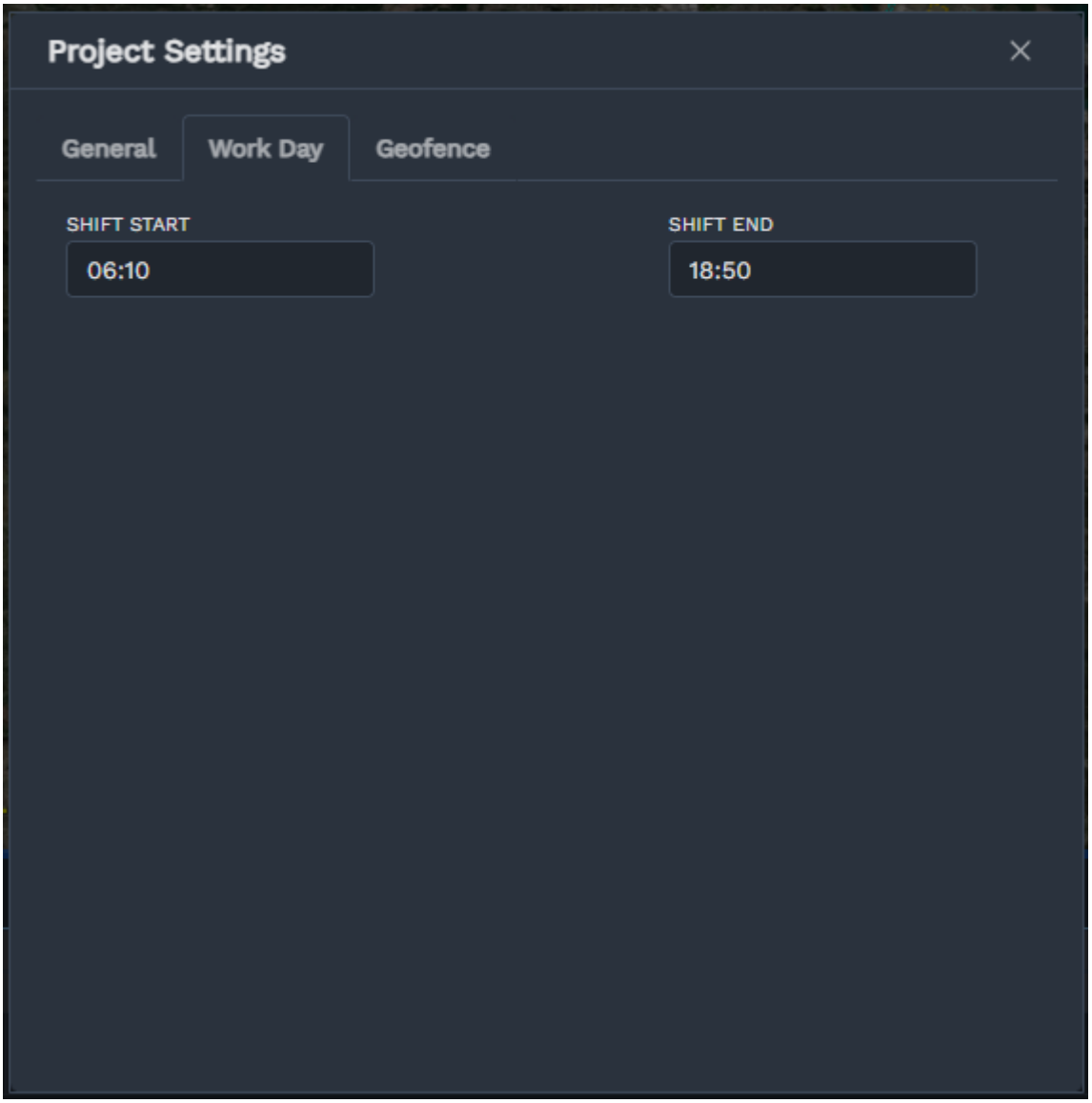
Project Managers can update some key project settings, such as the geofence or shift times, through the Project Settings menu.

General



You can adjust the name of the project or the default project timezone.

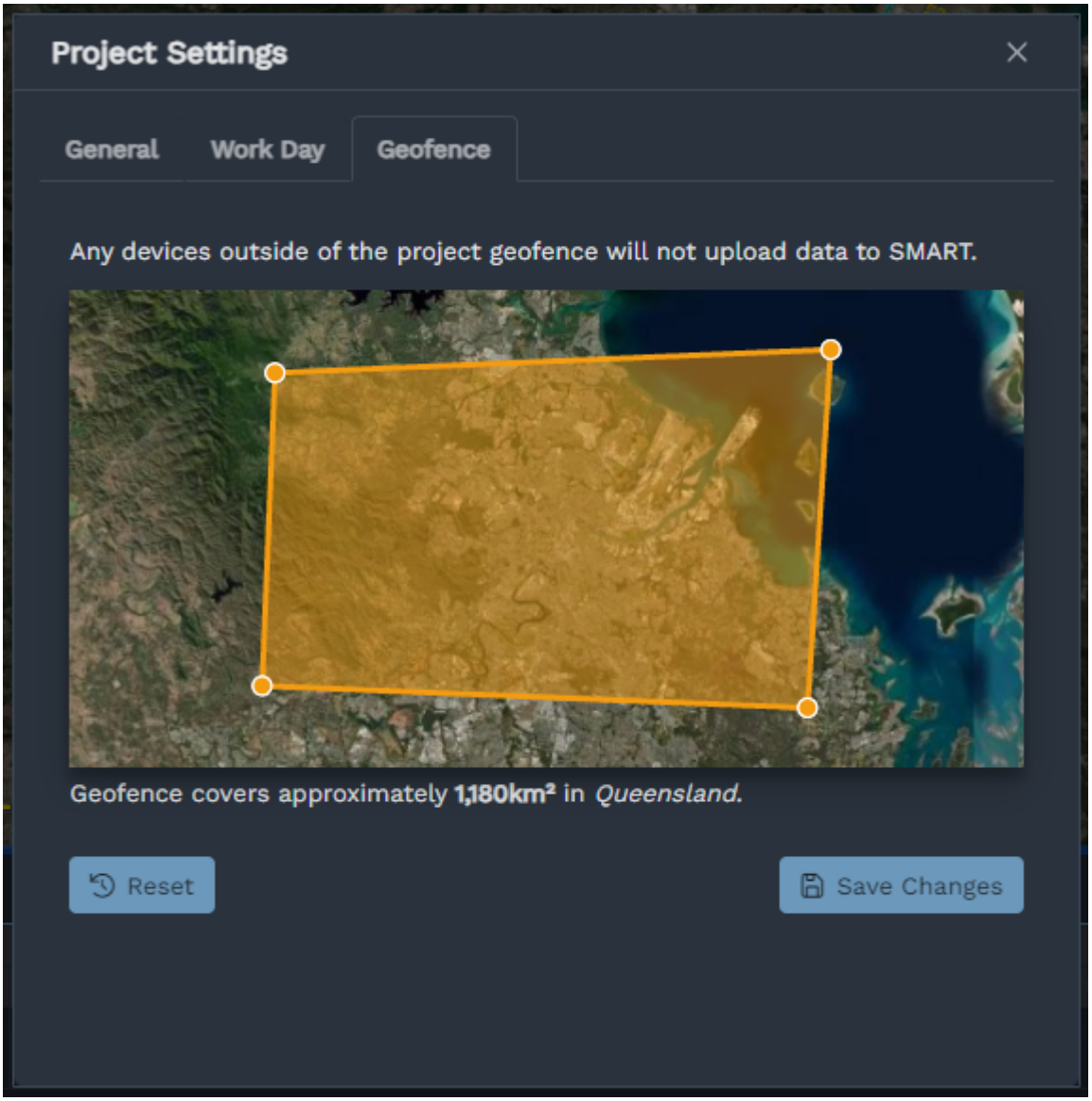
Work Day



You can adjust the start and end times of the shift. This allows SMART to provide better productivity estimates.

SMART currently only supports one configured shift for a project. If a schedule has been uploaded to a project, more precise details will be used in the analytics view.

Geofence



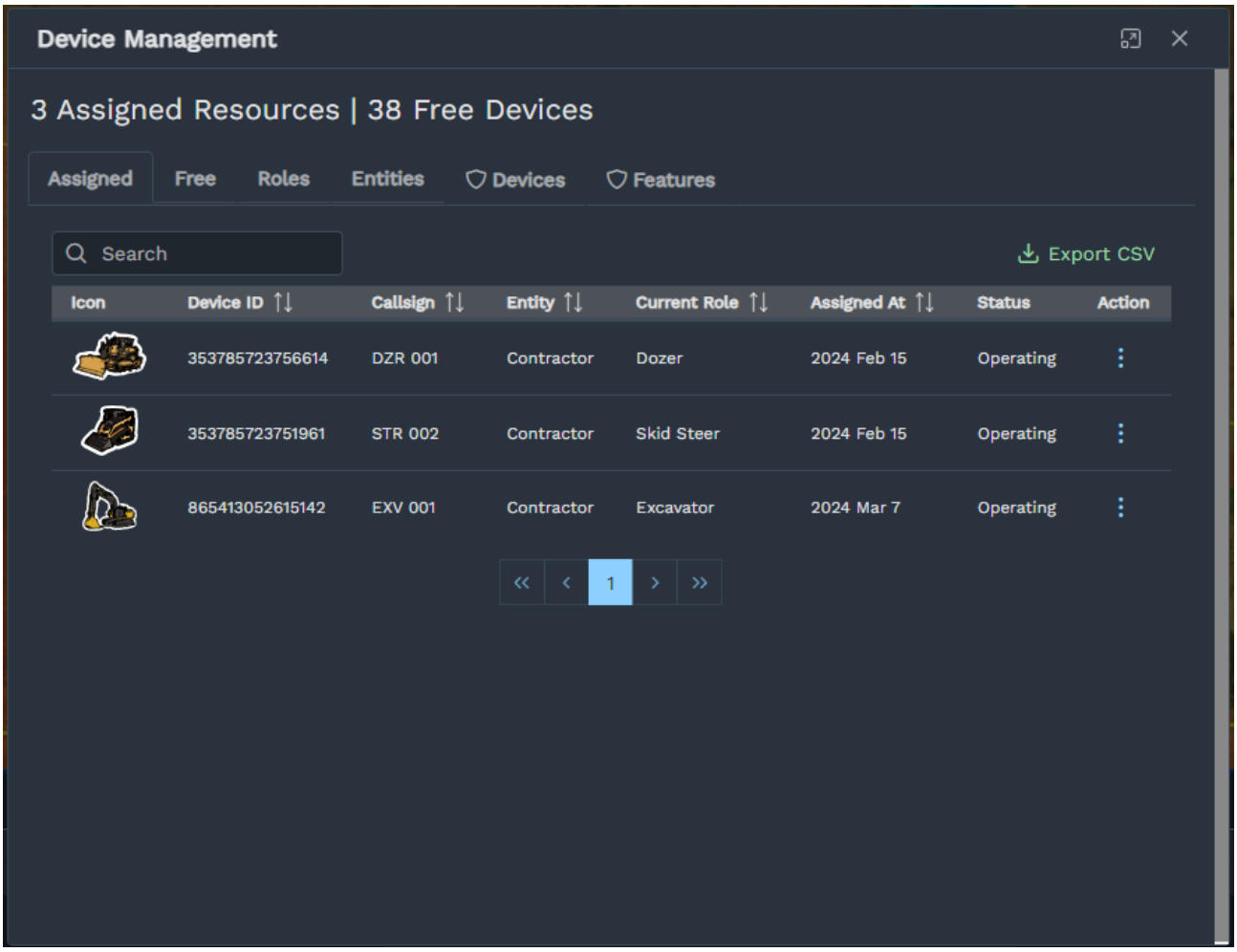
Any devices outside of the project geofence will not upload data to SMART. For privacy reasons, this helps ensure that your staff are not tracked if they accidentally remove devices from the projecct site.

You can adjust the project geofence here at any time.

Device Management

SMART has a completely self-service interface for managing which resource any given device is assigned to. To get the best results out of SMART, it is important to use all your devices and ensure that all resources on site are covered.

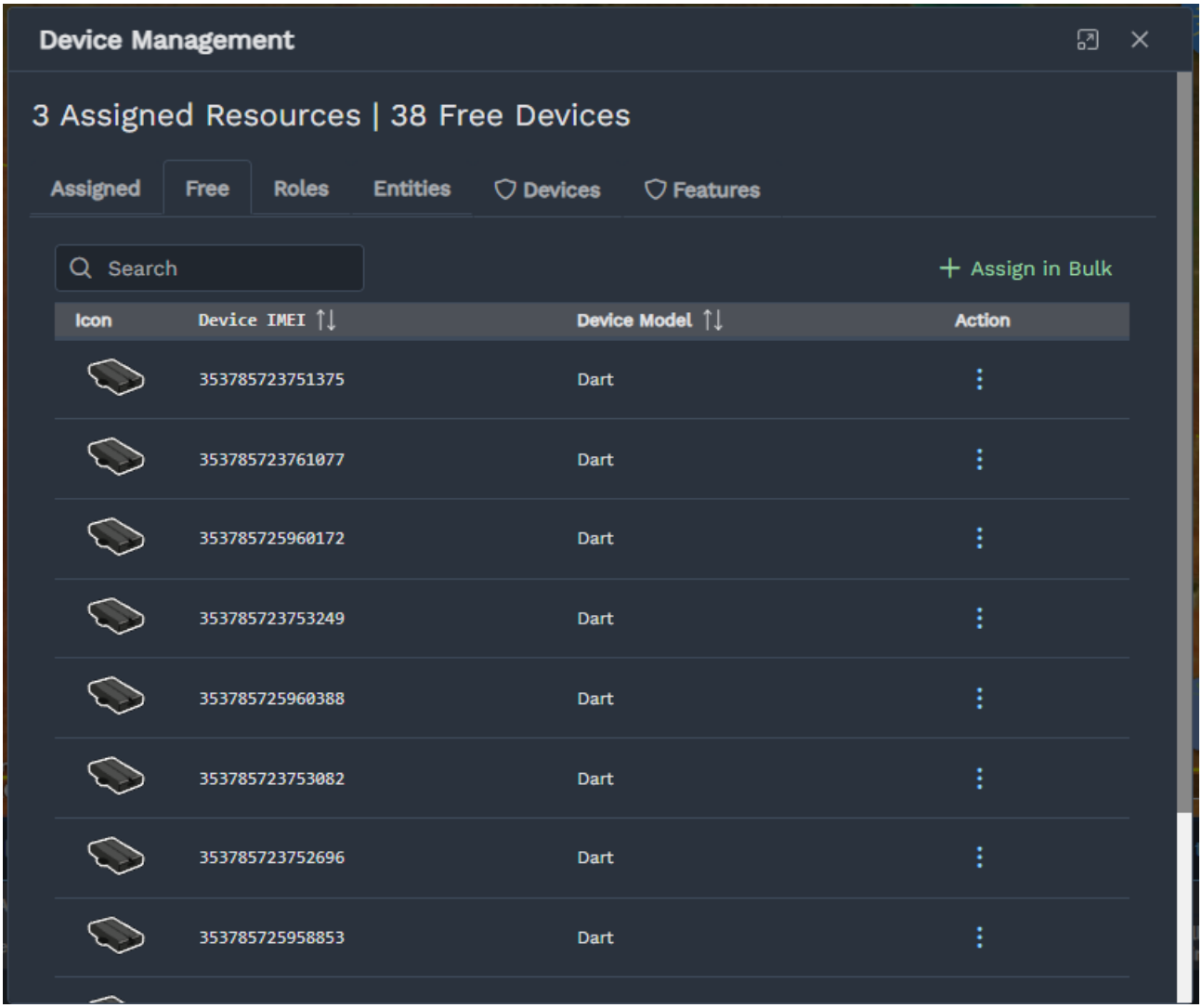
Assigned Resources



The Assigned tab shows all currently assigned resources for the project.

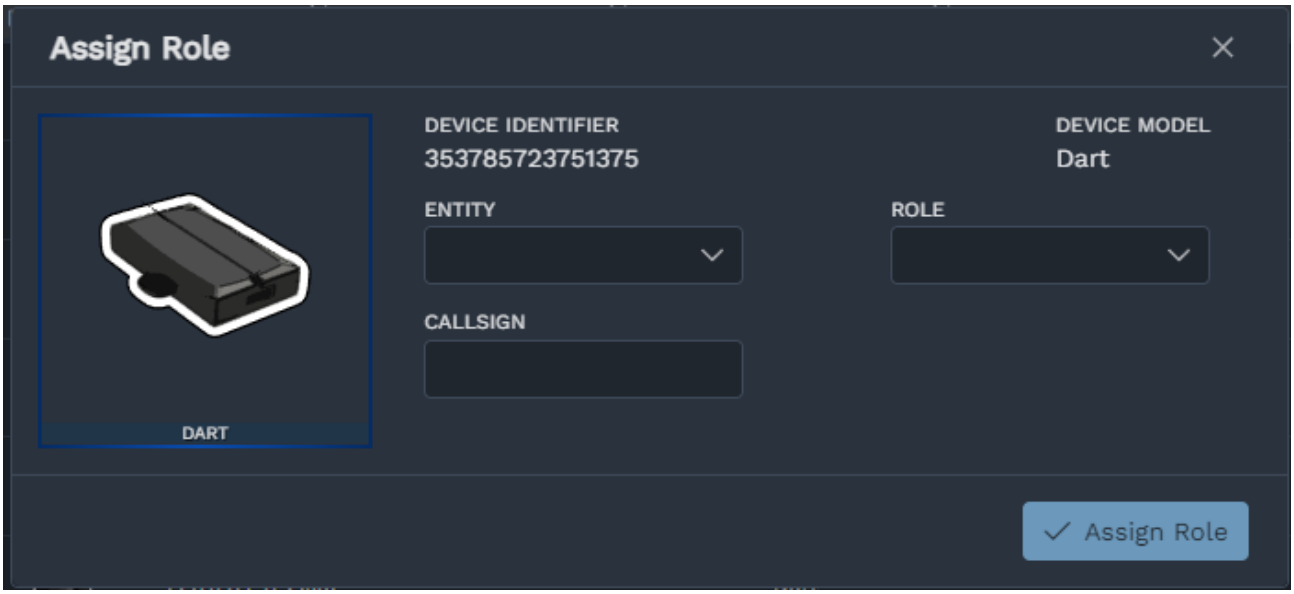
If a device has been removed from a resource and is no longer in use, it should be unassigned. Click on the ⋮ button in the Action column, and then select ‘Unassign Device’.

Free Devices



The Free tab shows all SMART devices that are not currently in use. These can be assigned to a resource at any time.

Assigning a Device

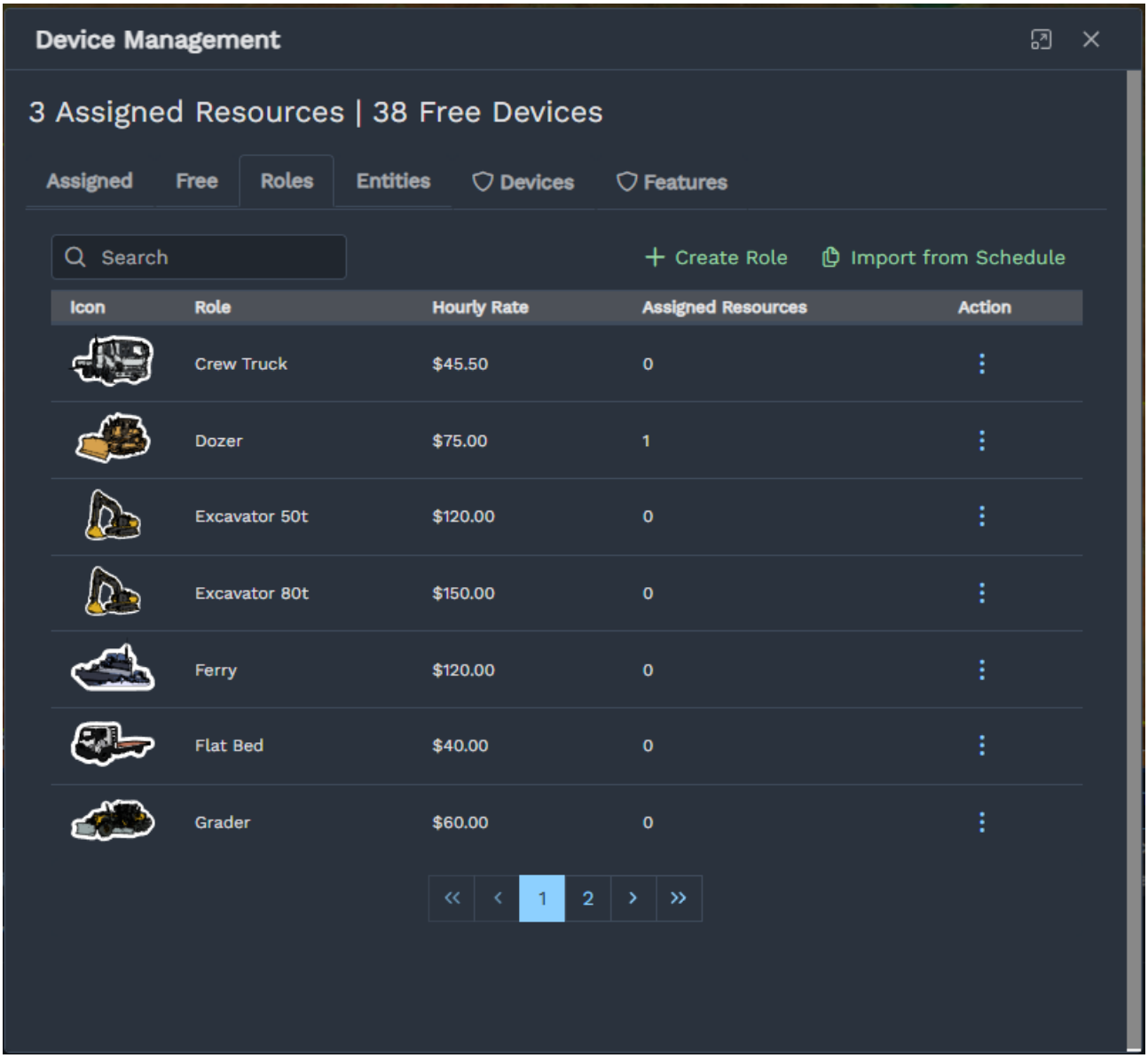


Click on the ⋮ button in the Action column, and then select 'Assign Device to Resource'.

Assign in Bulk

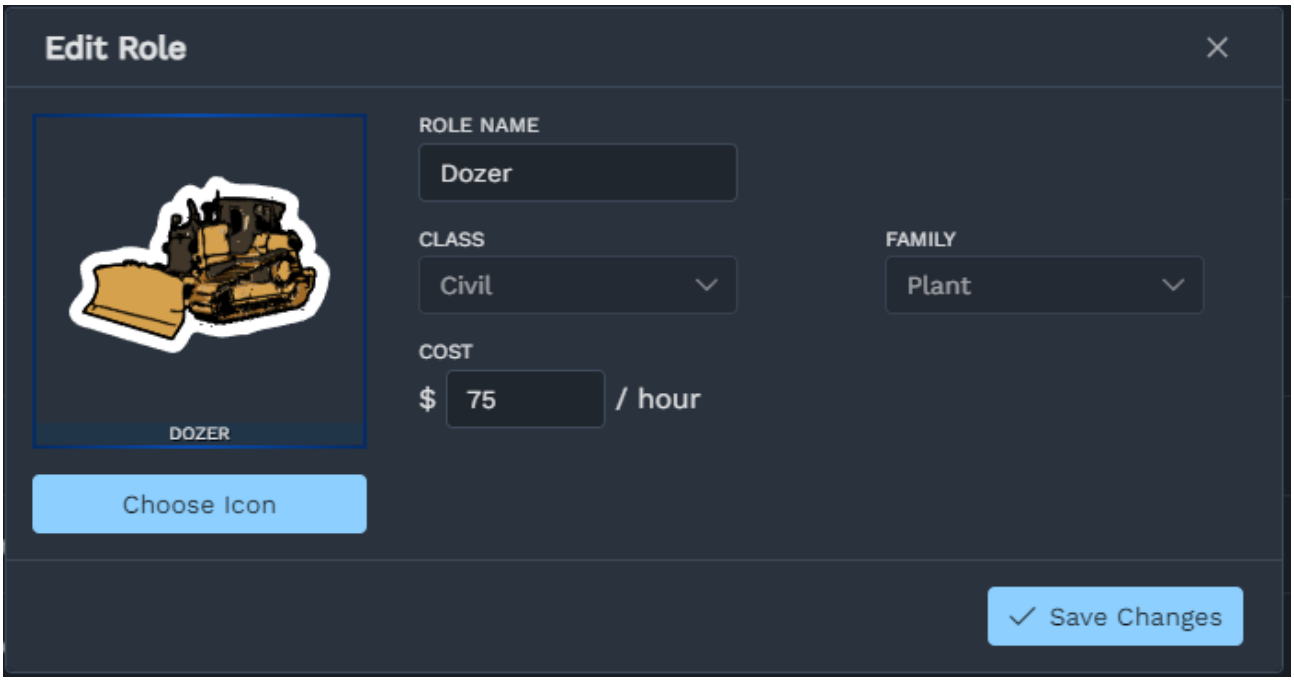
If you need to assign a large number of devices at once, it might be easier to use the bulk assignment function. Click on the '+ Assign in Bulk' button, and then download the template spreadsheet. Fill in the resource details, save the file, and reupload the file.

Roles



A role represents a type of equipment or job function on site.

Creating a new Role



To add a new role to the project, click the '+ Create Role' button in the top right of the table.

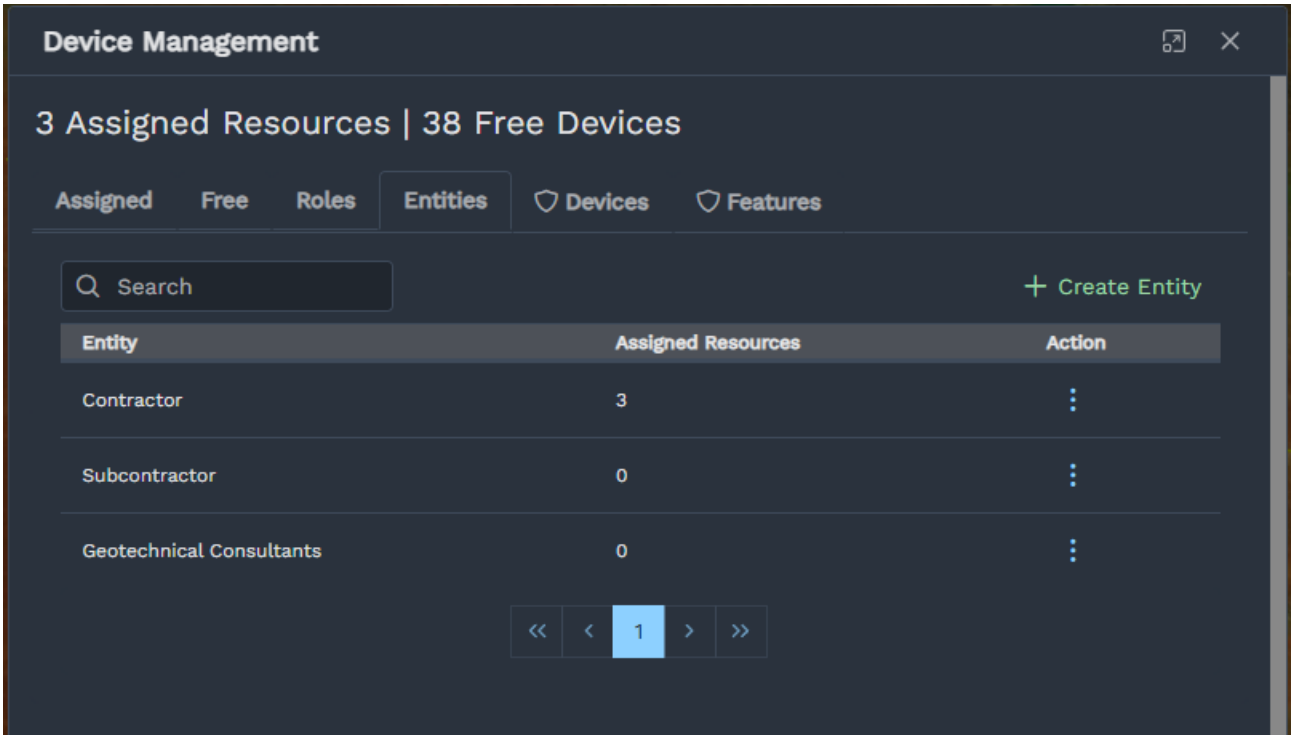
Editing a Role

You can change the name, icon, or costs associated with a role at any time.

Importing from Schedule

If you have uploaded a schedule to SMART, you can import P6 resources as SMART roles to quickstart your project management.

Entities



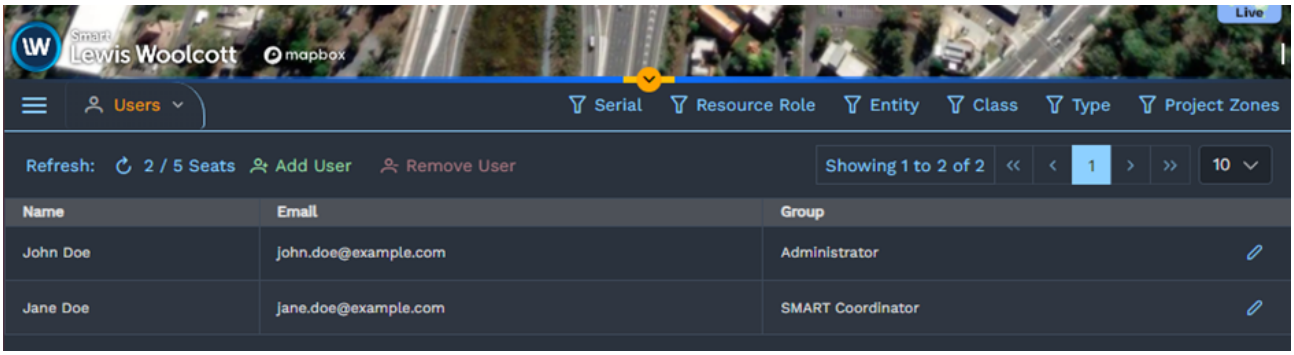
Entities represent organisational groups within a project. These enable you to distinguish between teams or subcontractors within a project.

Creating a new Entity

To add a new entity to the project, click the '+ Create Entity' button in the top right of the table.

User Management

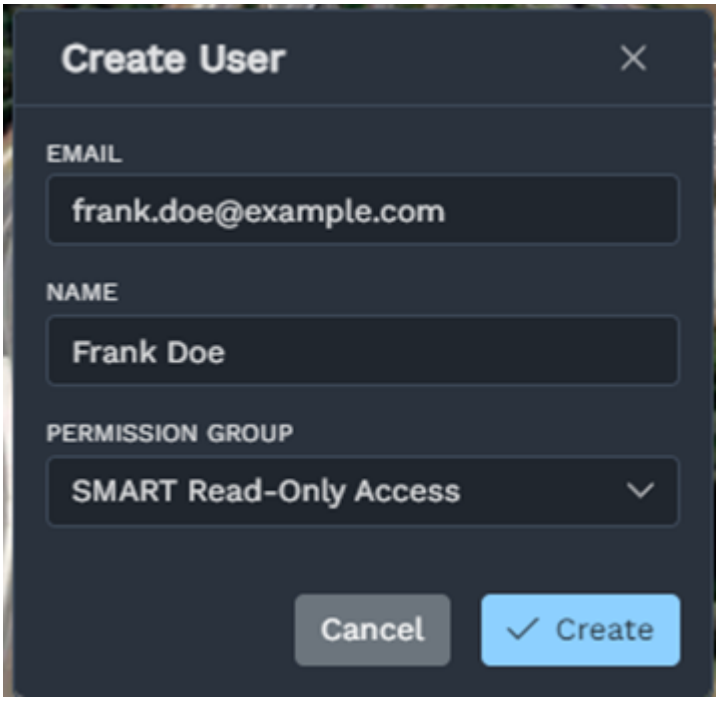
SMART is best when working together! Once your project has been setup, you can invite friends and colleagues to join you in the platform.



In the Users tab, you can see everyone who currently has access to your project; and invite new users to the platform.

Adding New Users

To add someone new to your project, click the Add User button.



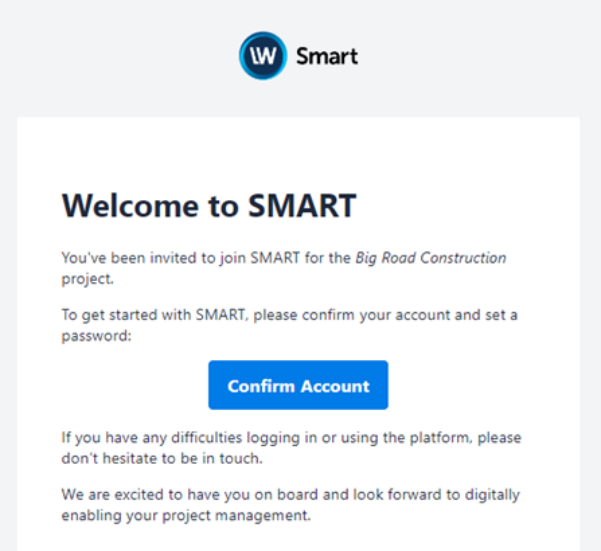
Enter in the email address of whoever you want to invite to SMART. Every user is assigned to a permission group, which controls what they can and cannot do within the platform.

By default, SMART comes with three permission groups:

- Administrator: full access to the platform. Administrators can configure key project settings, and grant access to new users.

- SMART Coordinator: access to device management. This is a great role for supervisors on your project – they are able to manage device assignments but cannot add new users to the project.
- SMART Read-Only Access: these users are able to browse through project data but cannot make any changes to the platform.

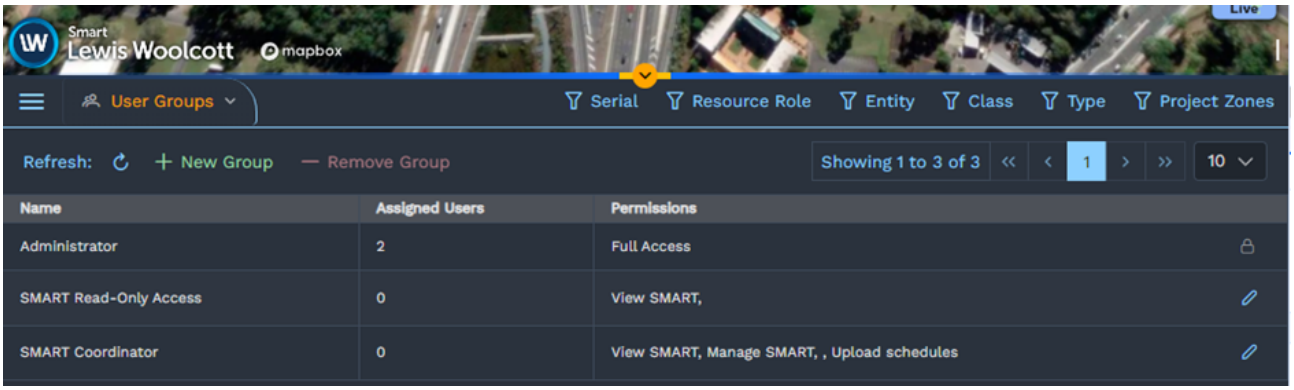
Once a user is added to the project, they will get an email inviting them to setup their account:



Each SMART project has a limited number of seats, depending on your current subscription plan. If you need to add more people to your project, contact us at `sales@lwanalytics.com` .

Permission Management

For most projects, the default permission groups should work fine, but if you want to create fine-grained access controls, you can manage permissions within the User Groups tab.



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