



HP SitePrint Robot User Guide (under development)

SUMMARY

How to use your product.

About this edition

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Legal notices

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Table of contents

1 Introduction	1
Welcome to your robot	1
Documentation	1
Safety precautions	1
Control panel	9
HP SitePrint Cloud	10
2 Product components	15
Robot box contents	15
Robot views and parts	16
Sensors	17
3 Useful links	18
When you need help	18
4 Prepare a CAD file	19
Layer breakout	19
HP AutoCAD plugin	19
5 Prepare to print	24
Site preparation	24
RTS compatibility	24
Prepare the robot	24
Remote control	29
6 Job execution	31
Prepare the RTS	31
Set up communication between robot and RTS	31
Set up the RTS	34
The Control Panel user interface	39
Support	45
Current limitations	47
7 Robot maintenance	49
Cleaning the printhead	49
Nozzle health check	49
Nozzle recovery	50
Purge the ink system	50

Check the safety sensors	51
Rebooting the system.....	52
8 Firmware update.....	53
9 Supplies and accessories.....	54
Trimble radio module.....	54
10 Robot specifications.....	57
Functional specifications	57
Physical specifications.....	57
Memory specifications	57
Battery-charger, battery, and robot power specifications.....	57
Ecological specifications.....	58
Environmental specifications	58
Acoustic specifications	58
Radio specifications.....	59
Index.....	60

1 Introduction

An introduction to your product.

Welcome to your robot

HP SitePrint is a robotic solution designed to automate site layout in building construction. HP is combining its printing knowhow and robotics technology to revolutionize construction site layouts, bringing breakthrough efficiency.

It is an end-to-end suite of technologies consisting of a rugged and autonomous robotic device designed to operate in the construction site, a set of cloud tools to manage the full layout process and a portfolio of inks designed to operate over different surfaces, environmental conditions, and durability requirements.

HP SitePrint will bring accurate layouts and groundbreaking performance and productivity to construction projects. Its precision is in a class of its own. It is consistently accurate on implementation and can handle complex layouts to help you get every job done exactly right. It also helps you to reduce layout costs, improving productivity by laying out faster and with less workforce, thanks to its autonomous printing with obstacle avoidance.

Documentation

Full documentation is available for your product.

The following documents can be downloaded from <http://www.hp.com/go/SitePrintRobot/manuals>:

- Introductory information
- Site preparation guide
- Assembly instructions
- User guide (this document)
- Legal information
- Limited warranty

Safety precautions

Before using your robot, read, understand, and follow these safety precautions, and your local Environmental Health and Safety regulations.

This robot is not suitable for use in locations where children, or people not involved in the use of the robot, are likely to be present.

-
-  **WARNING!** It is mandatory to have the appropriate technical training and experience necessary to be aware of hazards to which you may be exposed in performing a task, and to take appropriate measures to minimize the risks to yourself and to others. It is the responsibility of the robot owner or manager to

facilitate complete training of all possible robot users. Failing this requirement may result in personal injury or damage to equipment.

Perform the recommended maintenance and cleaning tasks to ensure the correct and safe operation of your robot.

Operations must be supervised at all times.

General safety guidelines

Please read these safety guidelines carefully.

There are no operator-serviceable parts inside the robot except those covered by HP's Customer Self Repair program: see <http://www.hp.com/go/selfrepair>. Refer servicing of other parts to qualified service personnel.

Take these precautions before starting work:

- If the working area has access to a lower level (floors under construction above ground level, open ramps, uncovered underground work areas, or stairwells), ensure that local safety rules are followed to avoid the risk of falling people or objects. Ask your EHS site representative to confirm that the site is safe before starting a job; if necessary, inspect the working area together with the EHS site representative to avoid residual risks.
- Ensure that no people, machinery, or unnecessary objects are present in the working area.
- Check that during transportation and handling of the robot there is no appreciable damage, deformation, or displacement of any component (sensors in particular) and that there are no ink leaks. If you find any problem, do not start a job, and contact your service representative.
- This robot is provided with a safety function to avoid falling over. Disabling this function may result in a hazardous operation. It is important to regularly clean and maintain the sensors as per the Robot Maintenance instructions.
- Perform the required calibrations, verifications, maintenance, and cleaning tasks to ensure the correct and safe operation of your robot.
- The robot contains sensitive electronic components. Check that the working area is not exposed to strong electromagnetic fields, which can cause robot malfunction.
- Discharge yourself of static electricity each time before handling the robot in any way.
- Do not operate the robot with covers or doors open or wrongly assembled.
- Avoid operating the robot on windy days.

Turn off the robot, by pressing the disconnection button and removing the battery, and call your service representative in any of the following cases:

- The enclosures are damaged.
- The robot has been mechanically damaged or misassembled.
- Liquid has entered the robot.
- Ink is leaking inside the robot.
- Ink is leaking outside the robot and is out of control.

- There is smoke or an unusual smell coming from the robot.
- The robot has been dropped and a sensor may have been damaged.
- The robot will not start.
- The robot is not operating normally.

Press the disconnection button, shelter the robot, and remove the battery in any of the following cases:

- During a thunderstorm, electrostatic discharges, or other electromagnetic interference
- Before the onset of rain, snow, hail, or other precipitation (the robot is not designed to work in these conditions)
- If the robot is not working and exposed to outdoor high temperatures and sunshine
- When the robot is parked and people not involved in the use of the robot could approach the working area
- During a power failure

Use only HP-branded ink. Do not use unauthorized third-party ink.

Read and follow the instructions on safety warning labels on the robot before using it.

Take these precautions after finishing a job:

- Avoid storing the robot where it will be exposed to sunlight, or very high or low temperatures.
- Avoid storing or parking the robot where it can be exposed to rain, snow, hail, or other precipitation, or to any kind of liquid or dust.

Material storage, handling, and disposal should be done according to local laws. Follow your Environmental Health and Safety processes and procedures. For further information, see the Safety Data Sheets (SDS), which you can find at <http://www.hp.com/go/msds>.

Electric shock hazard

The battery-charger assembly uses a local power cord. Unplug the power cord if you notice smoke or an unusual smell when charging the battery.

⚠ WARNING! The internal circuits of the battery-charger power module operate at hazardous voltages capable of causing death or serious personal injury.

To avoid the risk of electric shock:

- The battery-charger assembly should be connected to earthed mains outlets only.
- Always use the battery charger in indoor locations.
- Do not attempt to dismantle the battery charger or power module.
- Do not manipulate the power module or power cord. If you detect any imperfection, contact your service representative for assistance or change of component.
- Do not use electrical components not supplied with the robot.
- Do not try to use the battery charger for any purpose other than charging the robot battery.

Heat hazard

Take care when touching the external enclosure or handling the robot after long exposure to outdoor high temperatures.

To avoid personal injury, let the robot cool down before performing internal maintenance operations.

Fire hazard

The customer is responsible for meeting the robot's requirements and the Electrical Code requirements according to the local jurisdiction of the country where the equipment is installed.

To avoid the risk of fire, take the following precautions:

- Use only the battery supplied with the robot.
- To charge the battery, use only the charger supplied with the robot.
- Do not use damaged components of the charger (power cord, power module, or the charger itself). Do not use the charger with other products.
- Ensure that the battery-charger power module is suitable for the power source to which it will be connected.
- When charging or removing the battery, try to avoid particles or liquid entering the battery compartment or charger.
- Do not operate the robot outdoors when it is raining.
- When closing the battery compartment, make sure it is fully closed, to keep out liquids and dust.
- Use the robot within its specified operating and storage ranges of temperature, humidity, and altitude.
- Do not insert objects through slots or doors in the robot.
- Take care not to spill liquid on the robot. After cleaning according to the maintenance instructions, make sure all components are dry before using the robot again. If a significant amount of liquid has entered the robot, contact your service representative.
- Do not clean the robot with pressurized water or a large quantity of water or other liquids. Follow the HP recommendations.
- Check the air filters regularly in accordance with the instructions in this guide, cleaning them if necessary. Do not remove the filters: if you think they should be removed, call your service representative.
- Do not use aerosol products that contain flammable gases inside or around the robot. Do not operate the robot in an explosive atmosphere.
- Do not block or cover the openings of the robot.
- Do not open the robot or manipulate anything inside it. The robot may use ethanol-based inks, which could cause a risk of fire if they leak.
- Follow all maintenance instructions.
- Proper maintenance and genuine HP consumables are required to ensure that the robot operates safely as designed. The use of non-HP consumables may present a risk of fire.

Explosion hazard

To avoid the risk of explosion, take the following precautions.

⚠ WARNING! Ink-based ethanol leakages and especially vapors can be explosive in air in some concentrations. Take precautionary measures against static charges, and keep the robot away from sources of ignition.

⚠ WARNING! Remove the battery from the robot before putting the robot into its case for transportation, and before starting any maintenance procedure.

NOTICE: The equipment is not intended for hazardous locations or ATEX classified zones: ordinary locations only.

-
- Follow all maintenance instructions promptly, as needed (cleaning, filter replacement, ink-circuit purge, and so on).
 - Smoking, candles, welding, hot surfaces, and open flames should be forbidden close to the equipment and the ink-supply storage area.
 - Avoid working in areas with powerful radio frequencies or electromagnetic fields in general.
 - Do not work in areas where sparks can fly.
 - Do not open the robot or manipulate it internally. Internal ink leakages or ink-vapor emissions, combined with the generation of ESD (ElectroStatic Discharges) inside the ink-circuit pipes and fittings when removed or generated from contact with people, could create an explosion or fire risk.
 - Use HP recommended inks only. Do not use unauthorized third-party inks.
 - In case of ink leaks, all personnel should be freed from static electricity by discharging it before handling the robot.
 - Stop operation, remove the battery, and contact your service representative if any ink leak is detected.

Mechanical hazard

The robot has moving parts that could cause injury.

To avoid personal injury, take the following precautions when working close to the robot:

- The robot should be supervised during its operation.
- Always keep clean the four robot-safety floor sensors, and check frequently that they are working correctly.
- To reduce the risk of the robot falling onto someone from a height, ensure that the working area meets all the requirements of local safety laws according to the robot's size, weight, and operation. Get the approval of your EHS site specialist before starting work.

HP always recommends the use of safety nets or other protective barriers.

- To reduce the risk of the robot colliding with people, try to remove people from the working area. If they need to be there, remind them of the risk.
- Keep your clothing and all parts of your body away from the robot's moving parts.
- Avoid wearing necklaces, bracelets, and other hanging objects.

- If your hair is long, try to secure it so that it will not fall into the robot.
- Take care that sleeves or gloves do not get caught in the robot's moving parts.
- Do not touch gears or moving parts during operation or maintenance. Push the OFF button and remove the battery before performing maintenance.
- Do not operate the robot with covers or doors open or wrongly assembled.
- Do not park the robot on a slope of more than 4.4% inclination, to avoid it sliding down.
- Handle the robot with care to avoid dropping it. If you drop it, call your service representative to check it for damage that may affect your safety.

Light radiation hazard

Light radiation is emitted from the warning lights.

This illumination is in compliance with the requirements of the exempt group of IEC 62471:2006: *Photobiological safety of lamps and lamp systems*. However, you are recommended not to look directly at the LEDs while they are on. Do not modify the module.

Avoid looking directly at the red LED light from the front and rear sensors.

Chemical hazard

There may be flammable liquid in the ink cartridges. Keep them away from heat, hot surfaces, sparks, open flames, and other sources of ignition.

Inks might be classified, please see the safety data sheets available at <http://www.hp.com/go/msds> to identify the chemical ingredients of your consumables.

Ventilation

Fresh air ventilation is needed to maintain indoor comfort levels.

Ventilation should meet local Environmental Health and Safety (EHS) guidelines and regulations.

Ink handling

HP recommends that you wear protective gloves, protective clothing, and eye protection when handling ink-system components.

Please check the Safety Data Sheets available at <http://www.hp.com/go/msds> before handling the ink.

Ink, and components contaminated by ink, should be disposed of according to local laws. Follow your Environment Health and Safety processes and procedures. For further information, see the Safety Data Sheets.

The robot can work with ethanol-based inks. When handling or storing these inks, keep them away from sources of ignition, avoid high temperatures, and preferably store them in open locations.

Warnings and cautions

Symbols are used in this document to ensure the proper use of the robot and to prevent it from being damaged. Follow the instructions marked with these symbols.

- ⚠ WARNING!** Failure to follow the guidelines marked with this symbol could result in serious personal injury or death.
- ⚠ CAUTION:** Failure to follow the guidelines marked with this symbol could result in minor personal injury or damage to the robot.

Warning labels

Safety labels are included on your robot. See the table to understand what the labels mean; they are important.

Warning labels

Label	Explanation
	<p>Risk of personal injury due to impact if the robot falls from a height.</p> <p>Do not operate the robot on slopes of more than 4.4% inclination.</p> <p>Read the safety precautions in this guide and follow all instructions before starting a job.</p>
	<p>Risk of personal injury due to impact if the robot falls from a height.</p> <p>Do not operate the robot on slopes of more than 4.4% inclination.</p> <p>Read the safety precautions in this guide and follow all instructions before starting a job.</p>
	<p>Read the documentation</p> <p>Read the safety precautions in this guide and follow all instructions before starting a job.</p>

General cleaning instructions

For general cleaning, a lint-free cloth dampened with distilled water is recommended. Allow the cleaned part to dry, or use a cloth to dry it completely.

Do not spray fluids directly onto the product. Spray the fluid on the cloth used for cleaning.

To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent, or a general-purpose industrial cleaner (such as Simple Green industrial cleaner). Remove any remaining soap foam with a dry cloth.

For glass surfaces, HP recommends using a soft, lint-free cloth lightly moistened with a non-abrasive glass cleaner or with a general-purpose glass cleaner (such as Simple Green glass cleaner). Remove any remaining soap foam with a lint-free cloth dampened with distilled water, and dry the glass with a dry cloth to prevent spotting.

- ⚠ CAUTION:** Do not use abrasives, acetone, benzene, sodium hydroxide, or carbon tetrachloride on the glass; they can damage it. Do not place or spray liquid directly onto the glass, as the liquid might seep under the glass and damage the device.

HP recommends using a canister of compressed air to remove dust from electronic or electrical parts.

- ⚠ CAUTION:** Do not use a water-based cleaner for parts with electrical contacts, as it may damage electrical circuits.

- ⚠ **CAUTION:** Do not use wax, alcohol, benzene, thinner, ammonia-based cleaners, or other chemical detergents, to avoid damage to the product or the environment.
 - ⚠ **CAUTION:** Ink cleaning and maintenance materials should be disposed of according to local laws. Follow your Environmental Health and Safety processes and procedures. For further information, see the Safety Data Sheets, which you can find at <http://www.hp.com/go/msds>.
 - ⚠ **CAUTION:** Ink-based ethanol leakages and especially vapors can be explosive in air in some concentrations. Take precautionary measures against static charges, and keep the robot away from sources of ignition. See [Explosion hazard on page 5](#).
 - 📝 **NOTE:** In some locations the use of cleaning products is regulated. Ensure that your cleaner follows federal, state, and local regulations.
-

Transportation and storage

Transportation and storage instructions aim to ensure that your robot is safe and will function correctly.

Keep your robot safe and in order at all times. Take the following precautions when transporting or storing it:

- Turn off the robot and remove the battery.
- Turn off the HyperX joystick by selecting the USB mode (left position) in the toggle.
- To avoid blocked nozzles the next time you try to print, clean the printhead with a lint-free cloth dampened with distilled water or with a general-purpose industrial cleaner.

📝 **NOTE:** In some locations the use of cleaner products is regulated. Ensure that your cleaner follows federal, state, and local regulations.

- Before transporting the robot by air or sea, use the purge procedure to deplete or remove ink from it.
- Put the robot in its case, together with the mini-prism and battery charger.

⚠ **CAUTION:** Batteries should not be kept in the same case with ethanol ink cartridges or with any other items classified as dangerous goods for transportation, such as the robot after use. Use qualified packaging to transport the battery, meeting local, national, and international regulations.

⚠ **WARNING!** Batteries are classified as dangerous goods for transportation Class 9, and ethanol ink cartridges and cleaning fluids are classified as dangerous goods of transportation Class 3. Before transporting the product, ensure that you meet all the regulations for the transportation of dangerous goods.

- HP solvent-based ink cartridges have special requirements for transportation. For further information, see the Safety Data Sheets, which you can find at <http://www.hp.com/go/msds>.
- Dangerous goods transportation regulations may not permit transporting articles classified differently under those regulations. Before shipping your product, ensure with your transport agent that the shipment complies with all the regulations for the transportation of dangerous goods, and that it is labeled adequately.

💡 **TIP:** Whenever the robot is not operating, it should be kept indoors and in its case.

Control panel

The control panel allows you to control your robot remotely from a computer.

To use the control panel, first connect your computer to the robot's Wi-Fi network, giving the password found on the other side of the QR code included in the package, or alternatively on the sticker found on the HyperX joystick. To access the user interface from your tablet, you must open the Chrome browser and navigate to <http://192.168.10.1>.

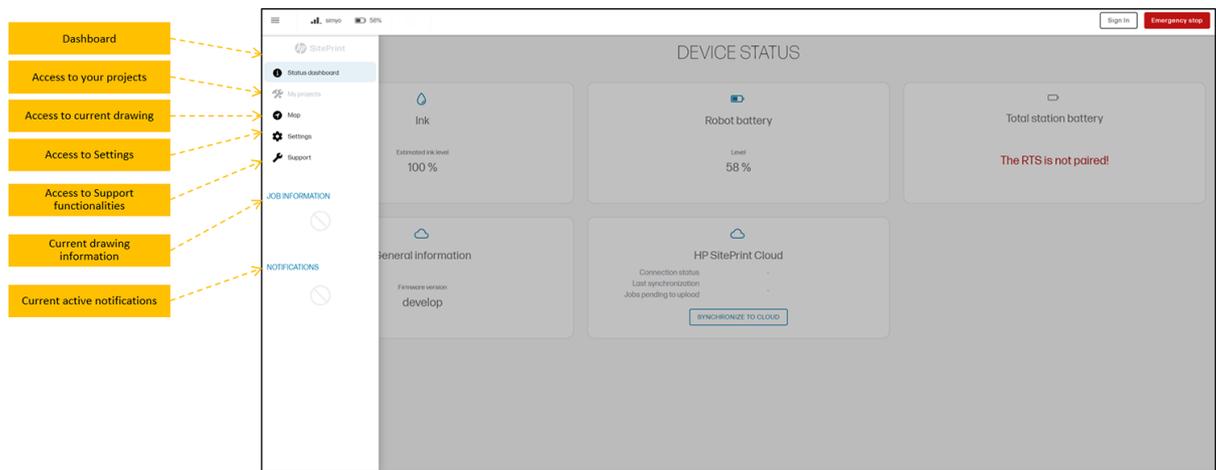


TIP: For a better experience, save a direct access to this URL on your tablet's desktop, so that the application will run in full-screen mode.

NOTICE: Only the Chrome browser is supported.

Control-panel home page with menu

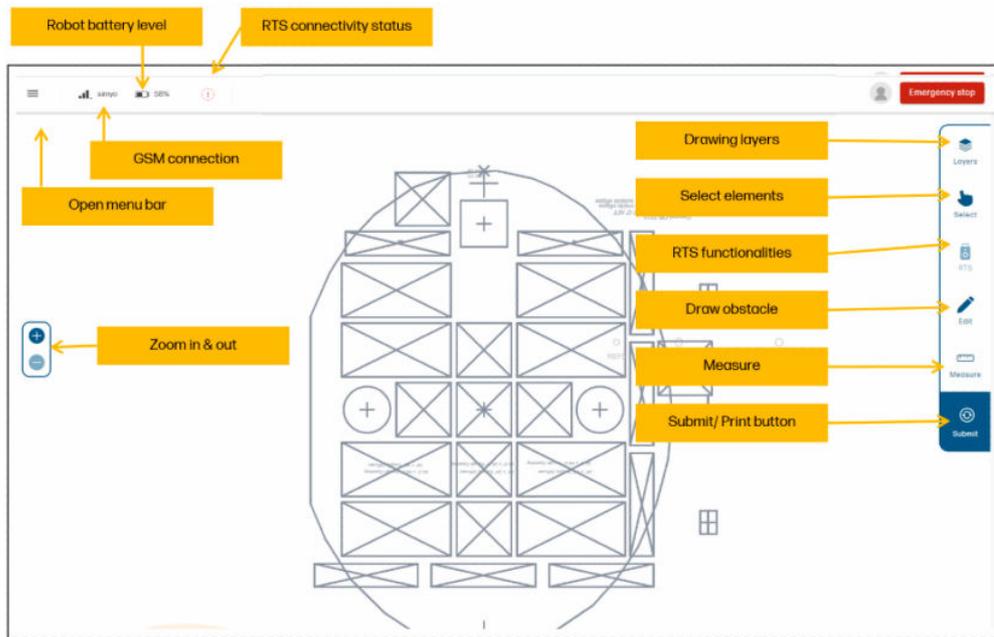
Press the Menu button (top left) to open up the menu and access the sections seen below.



Printing dialog

On the top right bar, you will find the main tools in the Control Panel:

- **Layers:** view all layers in the drawing.
- **Select:** select independent lines or areas to send them to print.
- **RTS:** Set up the Total station.
- **Edit:** add obstacles to the drawing.
- **Submit / Print button:** process the entire drawing before printing, and print a line selection once processed.



Line colors

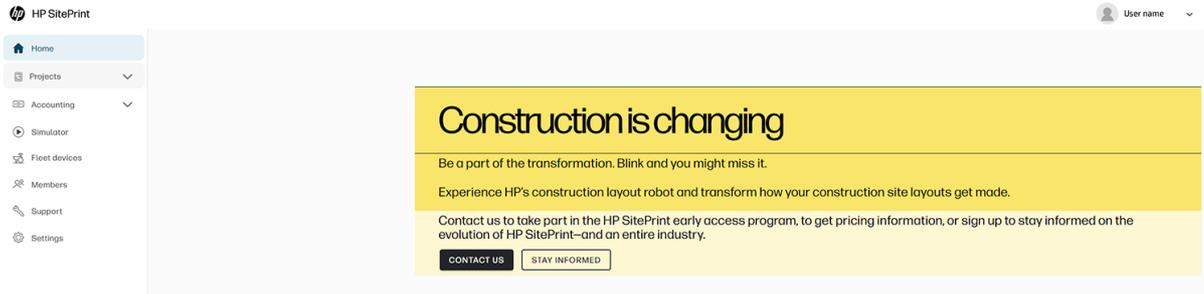
	Reference line
	Contextual lines
	Selected to print
	Being printed
	Skipped or not printed
	Printed
	Obstacle

HP SitePrint Cloud

The HP SitePrint Cloud is a website that helps you to track the usage of your robot and the cost of operating it.

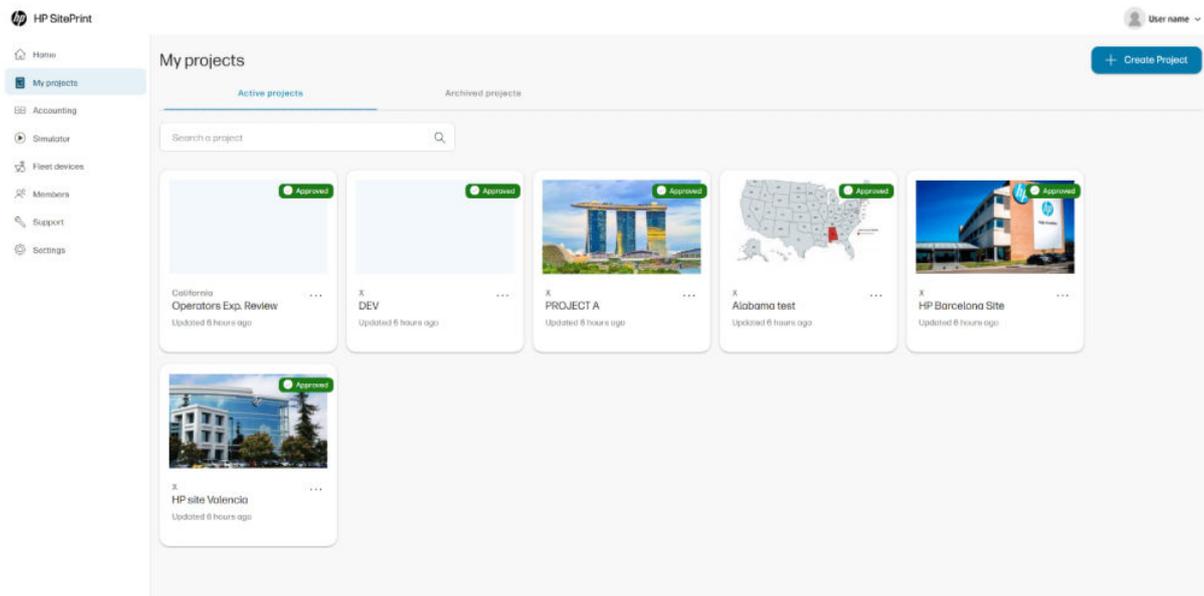
You can find it at <https://siteprint.hp.com>.

Once you have your robot, you will receive an email invitation to join the HP SitePrint Cloud; you can then log in or create your HPID account.

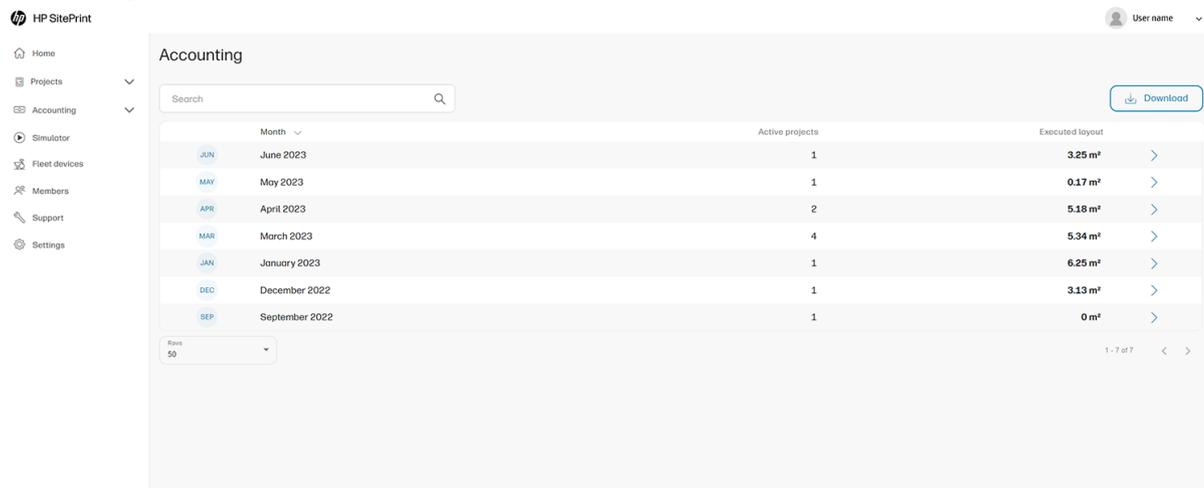


There are seven main sections in the Cloud: Projects, Accounting, Simulator, Fleet devices, Members, Support, and Settings.

Projects



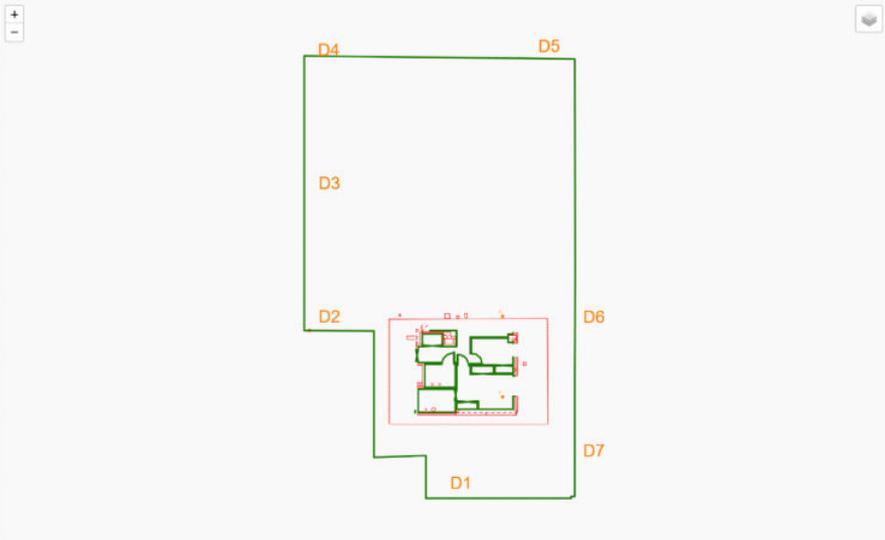
Accounting



Simulator

HP SitePrint

- Home
- My projects
- Accounting
- Simulator**
- Fleet devices
- Members
- Support
- Settings



Reference
Filename: SitePrint_D01_smoketest.dxf
Units: METERS
Size: 0K0MB
Last modified: 25/04/2023 01:00:20

CANCEL QUOTE

Use of cookies Privacy Terms & conditions

Fleet devices

HP SitePrint

- Home
- Projects
- Accounting
- Simulator
- Fleet devices**
- Members
- Support
- Settings

Fleet devices

Search

 3F8POA-ES35G1M001 ... 3F8POA-ES35G1M001	 djoseNew2-SNNew ... djoseNew2-SNNew	 LolaAlberto 3F8POA-LOLA-ALBERTO	 R&D Device 2 TEST-LOLA2-SN	 Device Ramon TEST-LOLA-RAMON	 Device Marina TEST-LOLA-MARINA
 Device Cristina TEST-LOLA-CRISTINA	 Device Xavi TEST-LOLA-XAVI	 GA LOLA#9 ... 3F8POA-3F8POA-69809	 GA LOLA#9 ... 3F8POA-3F8POA-69809	 GA LOLA#8 3F8POA-3F8POA-69808	 GA LOLA#7 3F8POA-ES217V96000300
 GA LOLA#6 3F8POA-ES217V96000200	 GA LOLA#5 3F8POA-ES217V96000100	 GA LOLA#4 3F8POA-3F8POA-69804	 GA LOLA#2 3F8POA-3F8POA-69802	 GA LOLA#11 3F8POA-3F8POA-69811	 GA LOLA#10 3F8POA-3F8POA-69810
					

Members

HP SitePrint User name

Home Projects Accounting Simulator Fleet devices **Members** Support Settings

Members

Search

Name	Email	Role	Cloud Role	Status
--	miquel.luiiz@pm.me	Operator	STANDARD USER	ACTIVATION PENDING
--	o@a.com	Admin	STANDARD USER	ACTIVATION PENDING
AR Alain Rovira	grupocappemini-services.alain.rovira@hp.com	Admin	STANDARD USER	OK (no HPID)
Alberto Amo	alberto.amo.marin@hp.com	Admin	HP GOD	OK
AR Alberto Rodriguez	alberto.rodriguez@hp.com	Admin	HP GOD	ACTIVATION PENDING
Alejandro Covés	alejandra.coves.vives@hp.com	Admin	HP GOD	OK
AN Andres Naves	andres.naves.mauri@hp.com	Admin	STANDARD USER	OK
ANON ANON	ANON	Operator	STANDARD USER	OK (no HPID)
Borja Navas	borja.navas.sanchez@hp.com	Admin	HP MFG	OK (no HPID)
Brandon Lara	brandon.laro@hp.com	Admin	HP GOD	OK
Bryan McMillan	bryan.mcmillan@hp.com	Admin	HP SUPPORT	OK (no HPID)
Carles Serra	carles.serra.vendrell@hp.com	Admin	HP GOD	OK (no HPID)
Cristino Garcia Olivares	cristino.garcia@hp.com	Admin	HP GOD	OK
Daniel Pribeagu	daniel.pribeagu@hp.com	Admin	HP ADMIN	OK (no HPID)
David Vendrell Tornero	david.vendrell.tornero@hp.com	Admin	HP GOD	OK

1 - 50 of 52

Support

HP SitePrint User name

Home Projects Accounting Simulator Fleet devices **Support** Settings

Support

Open cases Closed cases

Search

Download

Open case

1 2 Customer contact

General information

All fields are required unless otherwise indicated.

Robot ID *

Incident description (optional) 0/150

Cancel Continue >

Case ID	Open	Robot ID	Device	Project	Frequency	Support type	Robot swap
2306621135126	0					Remote	Don't swap
230519104848	1					Remote	Don't swap
230519103400	1					Remote	Don't swap
230509142308	0					Remote	Don't swap
230508134835	0					On-site	Don't swap
230426112559	2					Remote	Don't swap
230420152753	2					Remote	Don't swap
230419101826	1					Remote	Don't swap
230414155934	1					Remote	Don't swap
230414155917	1					Remote	Don't swap
230414155431	1					Remote	Don't swap
230414155016	1					Remote	Don't swap
230404142029	0					Remote	Don't swap
230404095618	0	04/04/2023	device-1	testAddProject	HP1_MONTHLY	Remote	Don't swap
230403160924	0	03/04/2023	device-1	testAddProject	HP1_MONTHLY	Remote	Don't swap
230403141429	0	03/04/2023	device-1	testAddProject	HP1_MONTHLY	Remote	Don't swap

1 - 27 of 27

Settings

HP SitePrint

User name ▾

- Home
- My projects
- Accounting
- Simulator
- Print devices
- Members
- Support
- Settings**

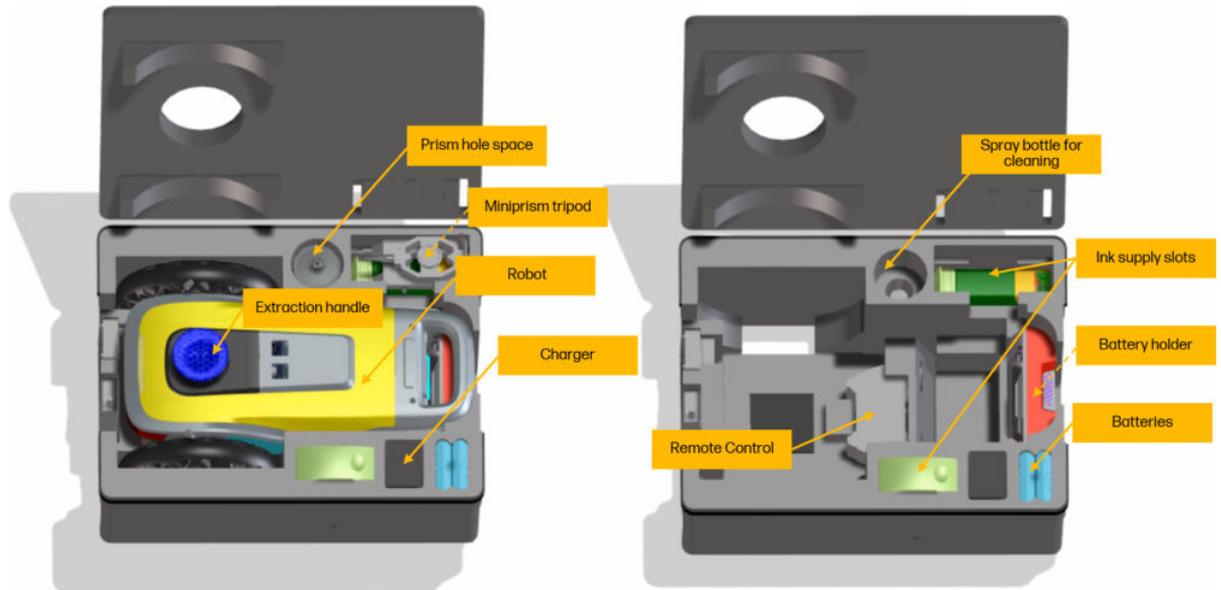
Settings	
Units	m ▾
Currency	€ ▾
Language	English ▾

2 Product components

The following views of the product illustrate its main components.

Robot box contents

The separate components stored in the robot box.

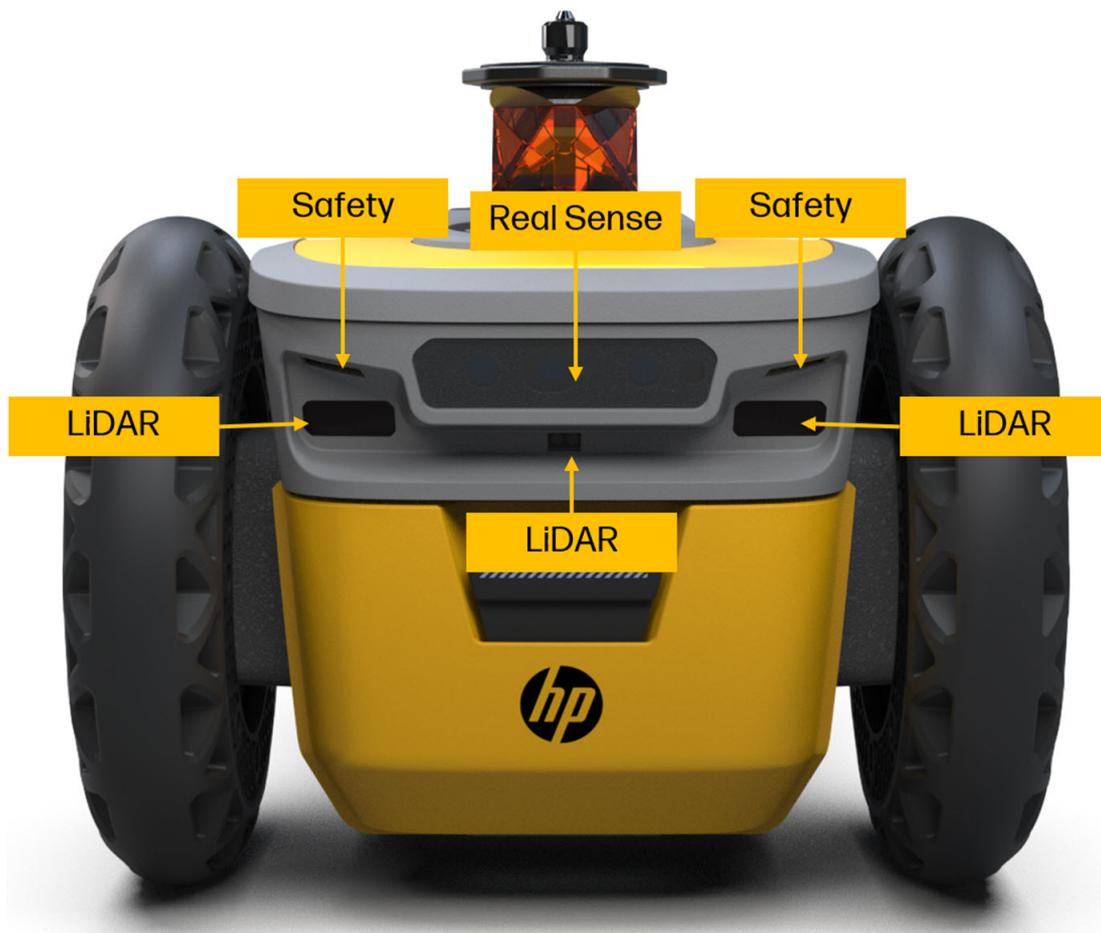


Robot views and parts

Views of the robot and its parts



Sensors



LiDAR sensors: These sensors are used for obstacle avoidance during navigation. They enable the robot to detect obstacles and avoid collisions.

Safety sensors: These sensors are intended to detect a cliff and prevent the robot from falling during operation.

If one sensor detects no continuity on the floor, it will trigger a safety stop. To resume the operation, the robot must be returned to a secure floor where all four sensors can detect the ground again.

 **NOTE:** Disabling this function may result in a hazardous operation. It is important to regularly clean and maintain the sensors as per the Robot Maintenance instructions.

3 Useful links

Locations on the Web that may be useful to users of this robot.

SitePrint Cloud: <https://siteprint.hp.com>.

SitePrint control panel: <http://192.168.10.1>.

Product support page: <http://www.hp.com/go/SitePrintRobot/manuals>.

When you need help

In most countries, support is provided by HP support partners (usually the company that sold you the robot). If this is not the case in your country, contact HP Support on the Web.

Help is also available to you by telephone. What to do before you call:

- Review the troubleshooting suggestions in this guide.
- Please have the following information available:
 - The robot you are using: the product and serial numbers



NOTE: You can find this information on a label at the rear of the robot.

- If there is an error code on the control panel, note it down.

Telephone number

Your HP Support telephone number is available on the Web.

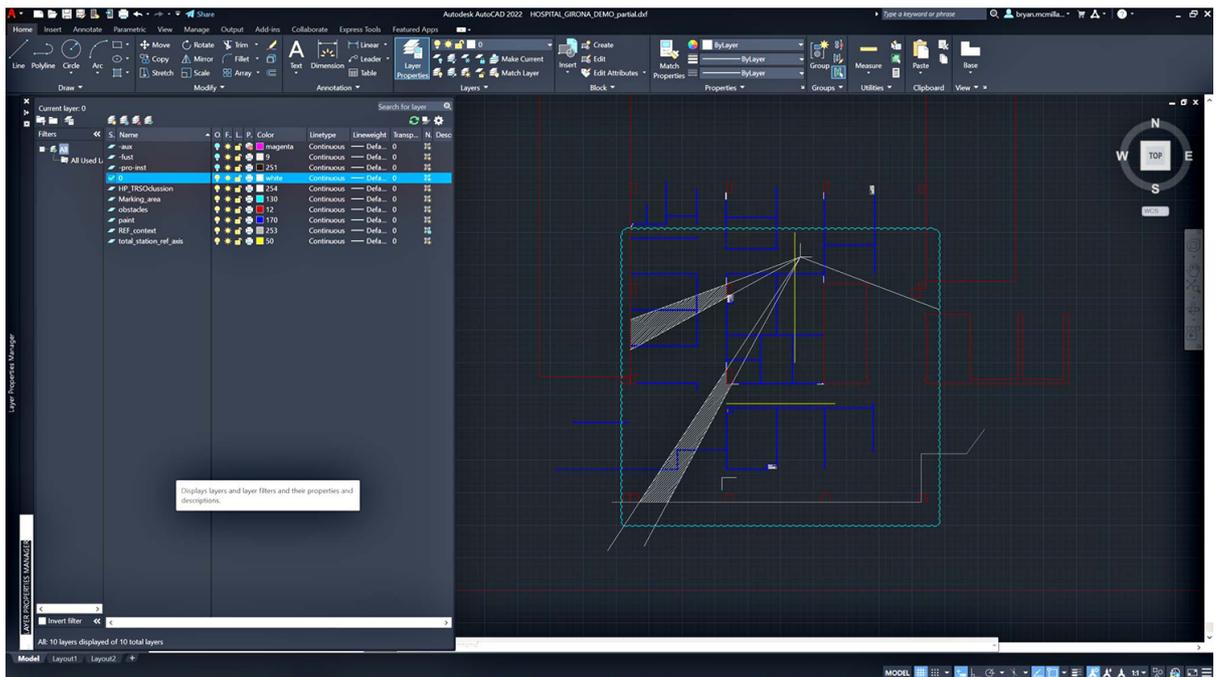
Please visit http://welcome.hp.com/country/us/en/wwcontact_us.html.

4 Prepare a CAD file

How to prepare an AutoCAD DWG file for printing.

Layer breakout

- All obstacles in the drawing should be placed on a separate layer as shown in red. Name the layer **obstacles**.
- All lines to be printed in the drawing should be placed on a separate layer as shown in blue. Name the layer **paint**.
- All reference lines in the drawing should be placed on a separate layer as shown in yellow. Name the layer **total_station_ref_axis**.



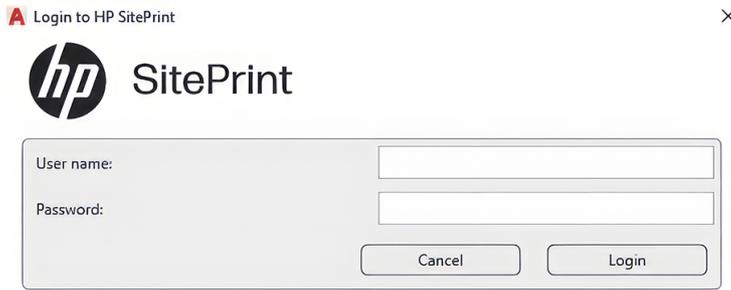
HP AutoCAD plugin

HP has developed an AutoCAD plugin that automates some of the preparations for using your robot.

Log in to HP SitePrint Cloud

When you run any SitePrint command for the first time after installation, you will see a login window in which you can provide your username and password.

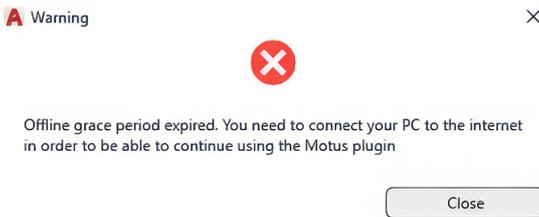
These are the username and password that you use to access the HP SitePrint Cloud (at <https://siteprint.hp.com>).



After you have logged in successfully, your SitePrint command will be executed.

As long as you maintain the Internet connection, you will not need to log in again.

If the Internet connection is cut, you can continue to use the plugin for 15 days after the last login. After 15 days, the plugin tells you that you need to connect and log in again.



If you reconnect within 15 days and run a SitePrint command, you will not need to log in.

Transformations performed by the plugin

The plugin creates a copy of your AutoCAD file in which to perform its transformations.

- Start the plugin by entering `HPPREPARE` on the AutoCAD command line.



- The original file is never modified. The output of the plugin is a copy of the original file with the required transformations, saved in the same folder as the original file. Two copies are saved, a DXF file and a DWG file, both with the prefix **SitePrint_**. The DXF file is the one that will be used to print by the robot.

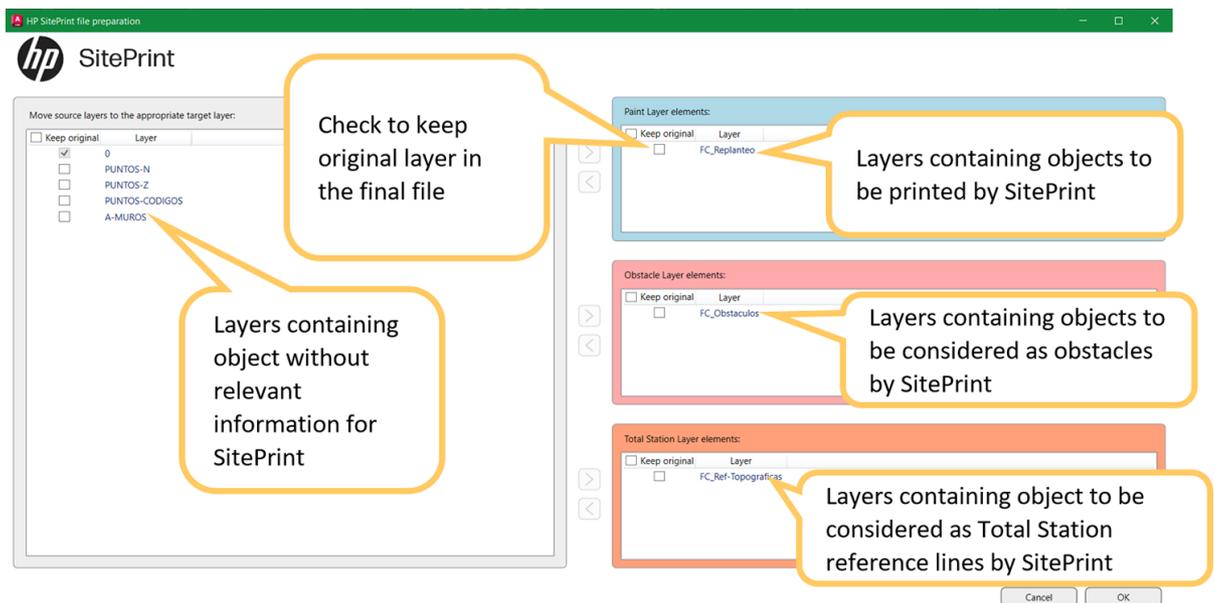
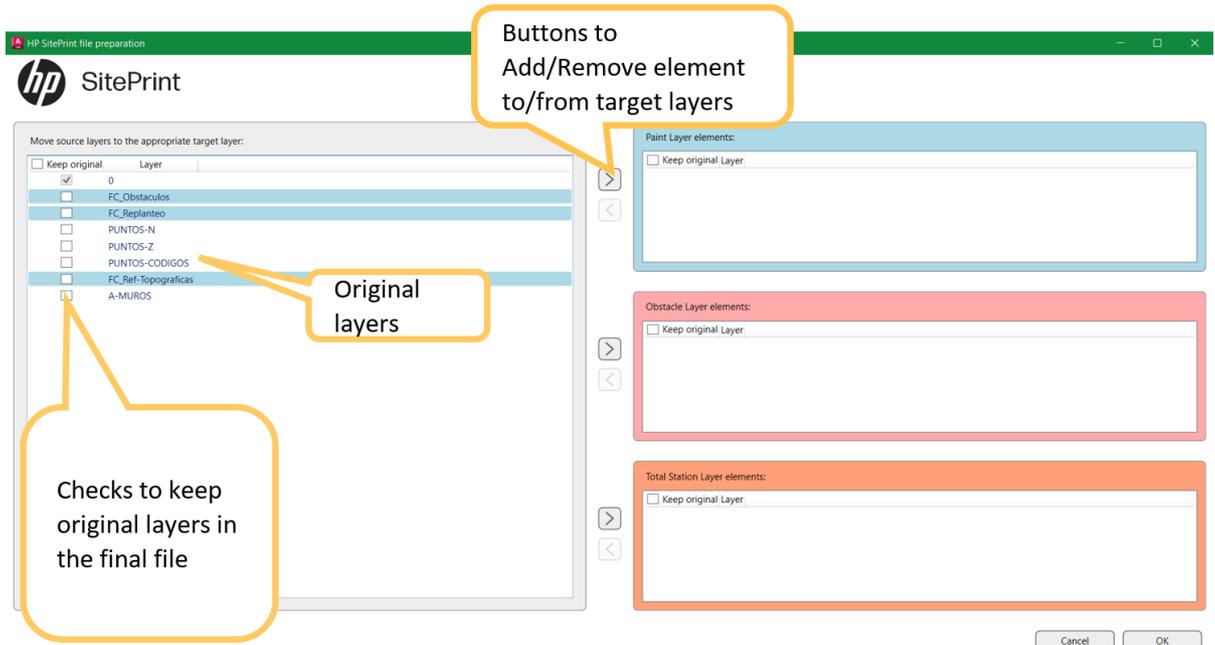
For example, if the input file is named **MyCAD.dwg**, the output files will be **SitePrint_MyCAD.dxf** and **SitePrint_MyCAD.dwg**.

 **IMPORTANT:** The plugin may use the AutoCAD OVERKILL command to remove duplicated objects from the working file, to optimize SitePrint performance.

 **NOTE:** You can edit the DXF file if you want to do so.

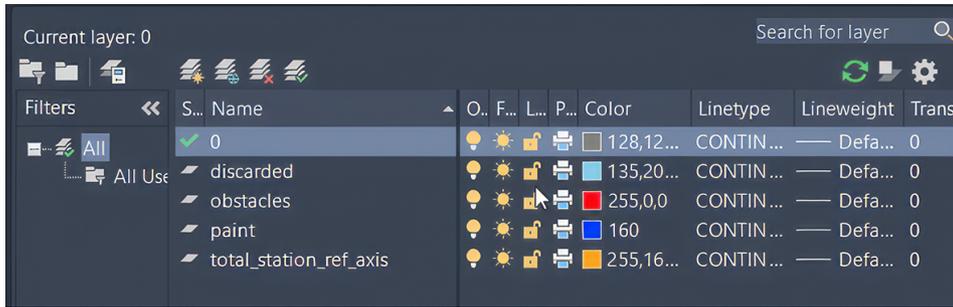
- The plugin displays the SitePrint file preparation dialog, in which you should specify which of the existing layers correspond to the required SitePrint layers.

- In addition, you can choose which layers retain their objects from the original document, by checking the **Keep original** option associated with the layer. The retained objects of these checked layers are displayed with the same properties, except for the color, which is changed to gray.



Click **OK** to start the transformations, or click **Cancel** to close the dialog with no action taken.

When the transformations have been done, the new DXF file is opened in AutoCAD. It will contain the following layers:

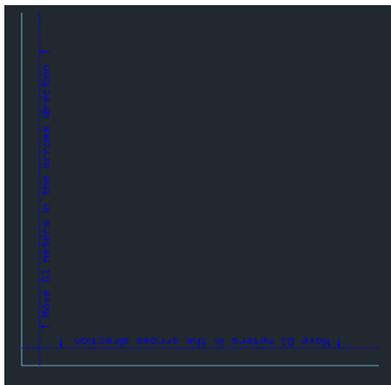


- **0** layer
- **discarded** layer, including elements that SitePrint will not be able to print, such as lines around obstacles:
 - Parallel to obstacles at a distance of at least 40 cm (16 in)
 - Perpendicular to obstacles at a distance of at least 20 cm (8 in)
- **obstacles** layer, shown in red
- **paint** layer, shown in blue
- total_station_ref_axis layer, shown in yellow
- Other layers, if you decided to keep some from the original file that are not related to the above

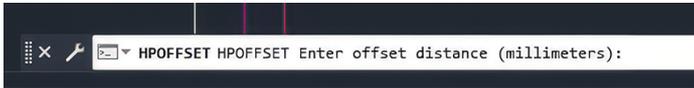
How to create offsets

With a file transformed by the plugin, you can run the HPOFFSET command to generate lines offset at a specified distance from the selected ones.

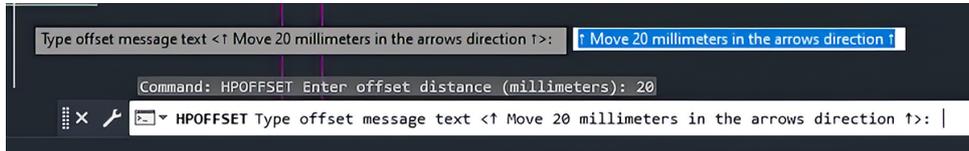
Before running HPOFFSET, you must select the line or lines from which you want the offsets to be made.



The HPOFFSET command asks for the offset distance, in the current drawing units.



- Positive distances generate the offset lines to the right and/or above the selected lines; negative distances to the left and/or below.
- Once you have entered the distance, HPOFFSET asks for a description of the new offset lines. By default, it suggests "Move {distance} in the arrows direction".



- For each selected element, it creates a parallel dashed line at the specified distance with your descriptive text, and puts the original element in the **discarded** layer.

5 Prepare to print

Site preparation

Bear in mind that the conditions at the worksite play a crucial role in the success of a job.

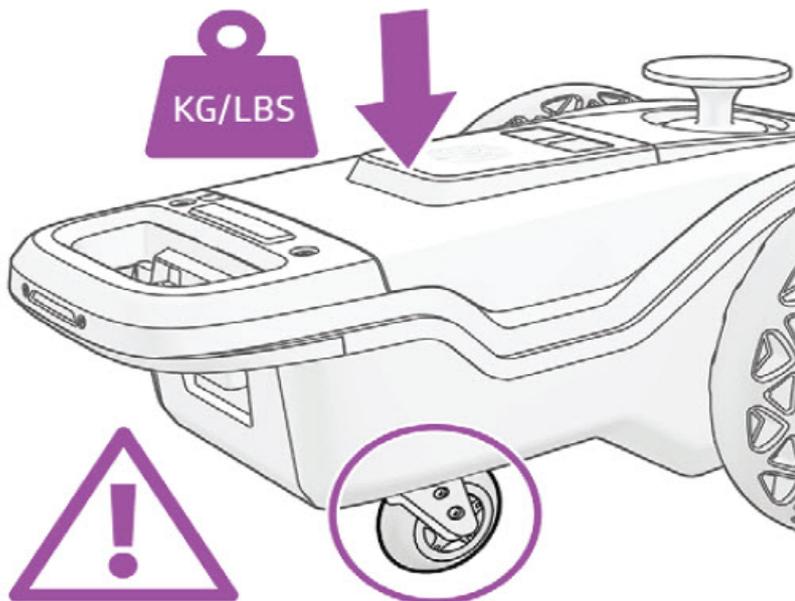
Please ensure that it is used under the following conditions:

- Ensure there are no materials stored in the layout area for the robot.
- Cover any holes where the robot could fall or wheels could get stuck.
- Avoid dark or black surfaces or areas with water spots, as they may cause reflections that could trigger the safety sensors and stop the printing.
- Do not use the robot in temperatures above 45°C (113°F) or below -25°C (-13°F).
- Do not use the robot in heavy rain or extremely dusty environments.

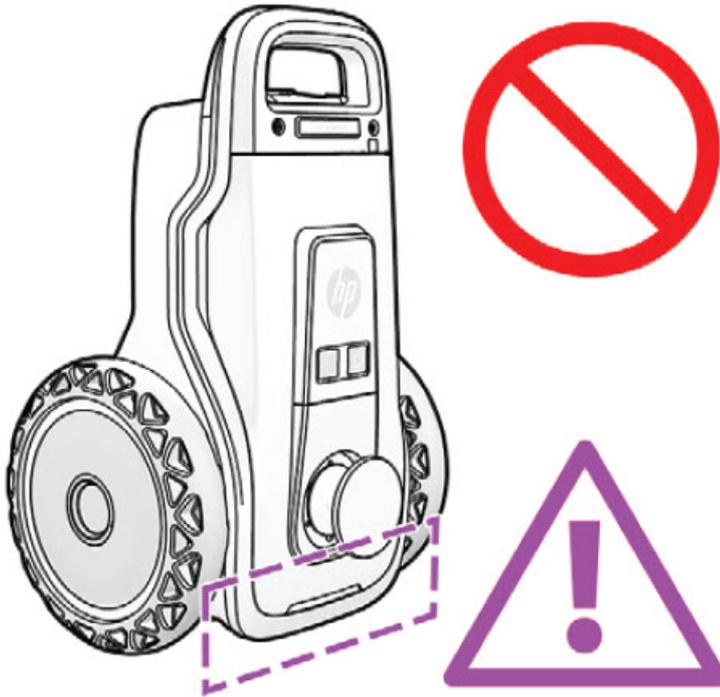
RTS compatibility

Currently, SitePrint is compatible with the following RTS models: Leica TS16, Leica iCon80, Trimble RTS573, Topcon LN-150.

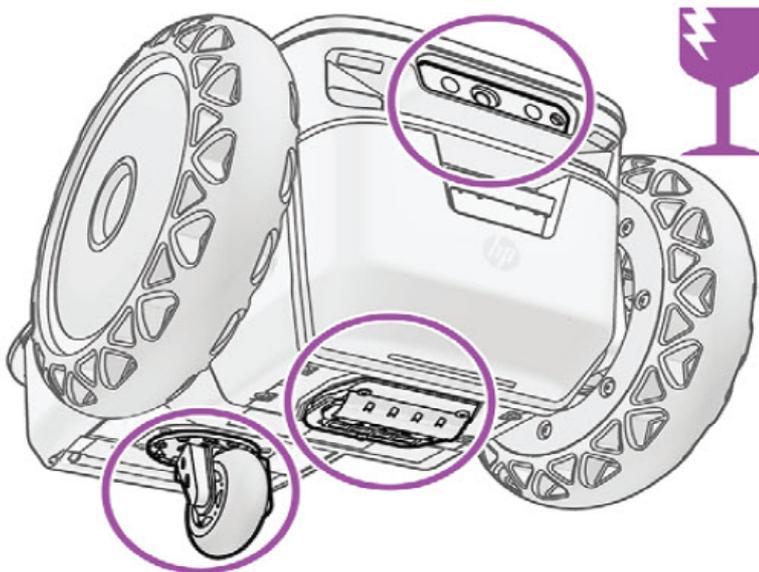
Prepare the robot



⚠ CAUTION: Do not lean on the robot when manipulating it: the caster wheel might break.



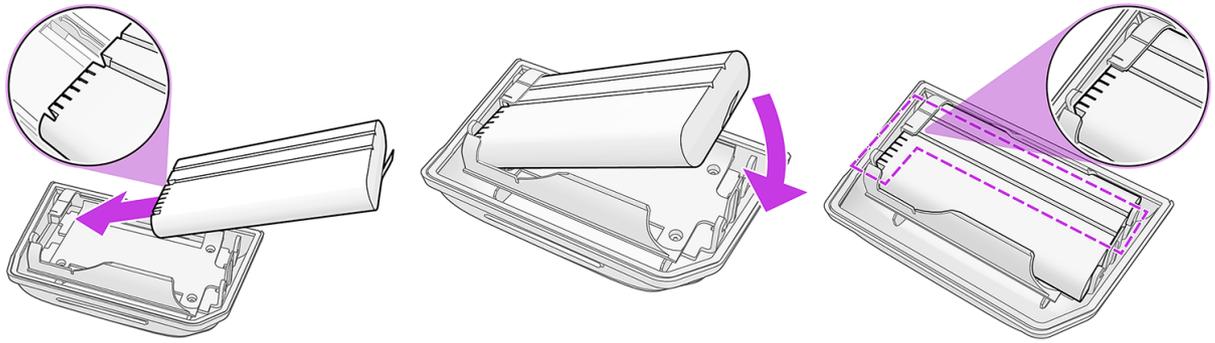
⚠ **CAUTION:** Do not place the robot vertically: it might fall.



⚠ **CAUTION:** Bear in mind that the fragile areas of the robot are the caster wheel, the printhead, and the front sensors. Handle the robot with care to protect them.

Insert the battery

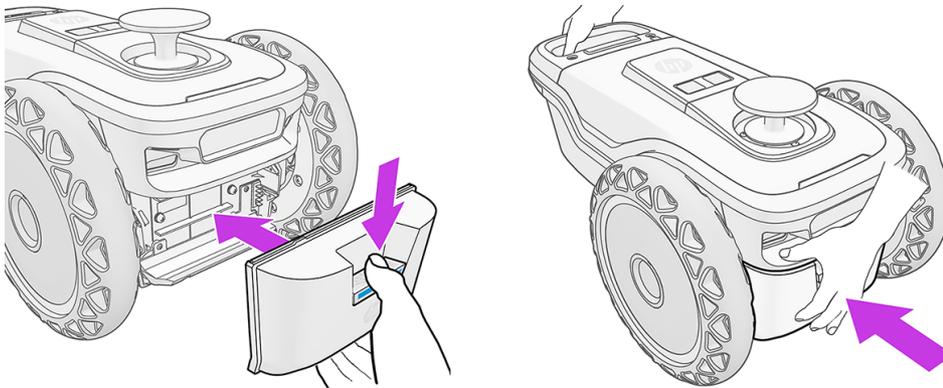
How to insert the battery into the robot.



- Take the battery holder and a charged battery.

 **TIP:** Make sure that the battery is charged.

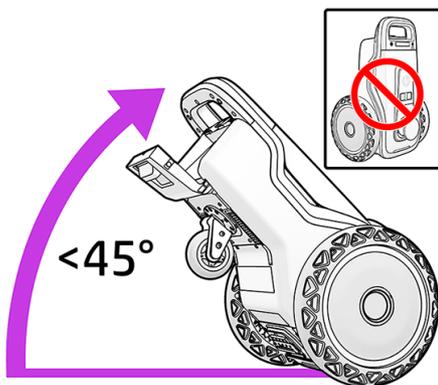
- Locate the pins in the battery, and place them into the corresponding holes in the battery holder.
- Two parallel grooves should remain visible during the process.
- Place the battery holder and battery into the robot, keeping the latch pressed with your thumb. Hold the robot by the rear handle or by the wheel while locking the battery holder into place.



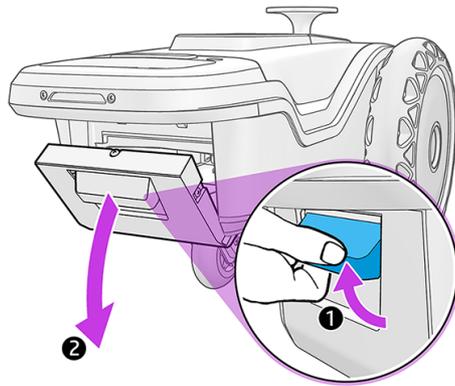
Insert the ink cartridge

To insert the ink cartridge, the robot should be horizontal, or rotated by 45°.

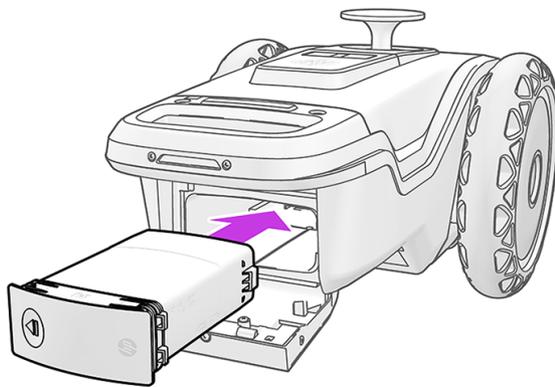
 **CAUTION:** Do not rotate the robot by more than 45°, which could damage the sensors.



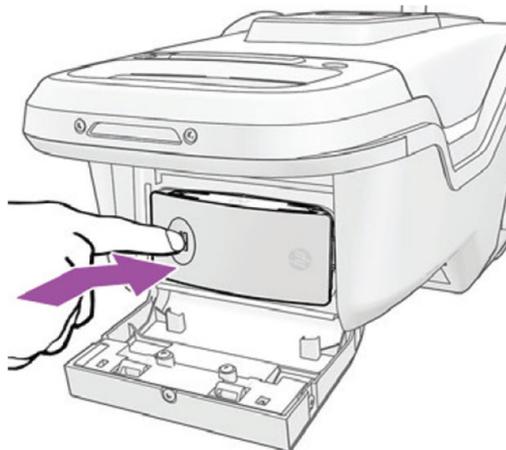
1. Open the door.



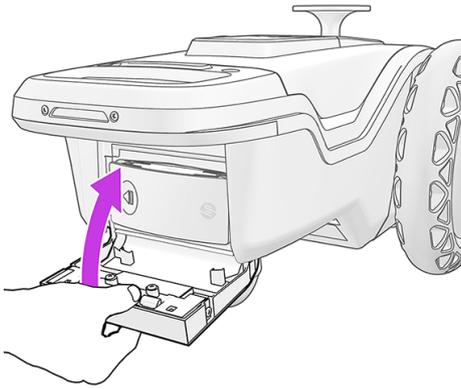
2. Insert an ink cartridge.



3. Press to the right to lock the cartridge in place.



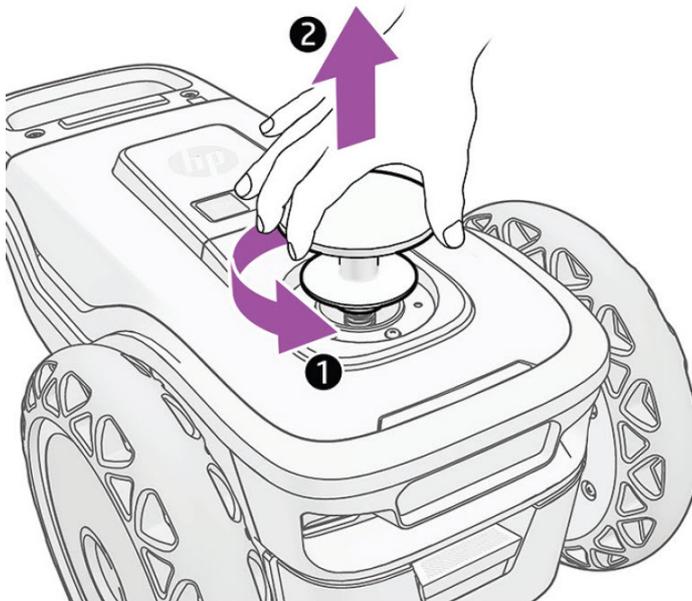
4. Ensure the ink supply is fully inserted and close the door. You will feel a "click" upon closing the door .



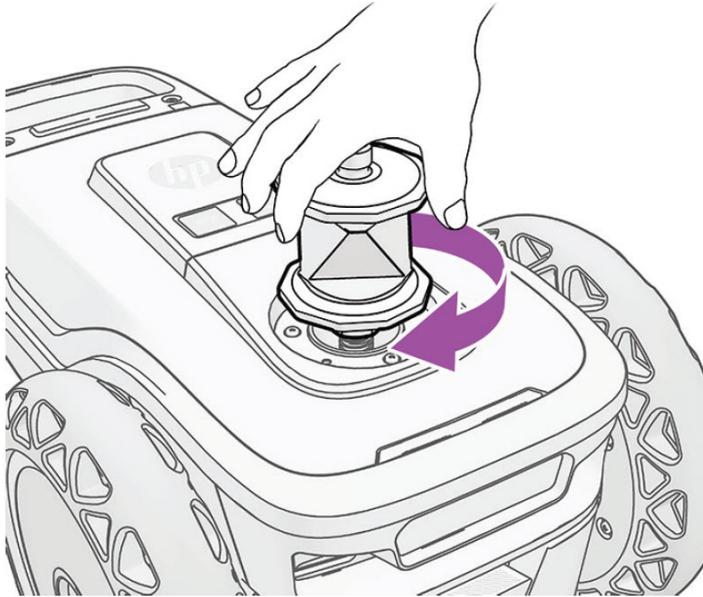
Insert the prism

Take the following steps to insert the prism.

1. Take the extraction handle off the robot.



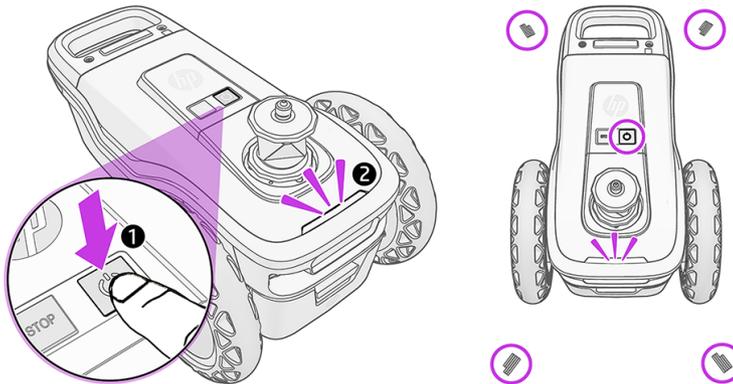
2. Insert the 360° prism and secure it in place by screwing it.



The handle can be stored in the suitcase prism-slot.

Turn on the robot

Turn on the robot by pressing the power button on top, and wait for the LEDs to turn white.



You should see four LEDs light up at the front and rear of the robot. If the LEDs turn orange or red, press the power button again.

Remote control

You can use the remote control to operate the robot and the RTS from a distance. The maximum certified operating distance is 8m / 26ft. It has a maximum tested reach of 18m / 59ft.

Each remote control operates one particular robot, whose ID is shown on a sticker underneath the remote control.

Use of the remote control

The following image shows the various buttons and features of the remote control.



The controller is used to manually control the robot to ease the movement between areas, to position it to start a job or to help the robot to overcome a certain obstacle.

To enable manual control:

1. Make sure controller is ON. Use the switch on the bottom of the controller. Set the switch in the 2.4G position (central one).
2. Connect the controller to the robot. Use the "Home" button in the center of the controller. Lights in the controller will start blinking. Lights on the controller should be on permanently once connected.
3. Press the "A" button to enable the manual control. Make sure a red pilot is switched on in the robot's front LED light.
4. Hold "L1" to start moving the robot. Use the joystick to move forward/backwards and steer the robot.

To recover control after safety sensor activation:

1. Make sure red pilot is ON (manual control is enabled). If not, press the "A" button.
2. Press "Select" button to reset the sensor.
3. Try to move the robot using the joystick by holding "L1" button and steering it.

If the SitePrint is not responding, make sure all four safety sensors are visible and pointing towards a flat, non-reflective surface. Shiny or extremely dark surfaces could cause the sensors to activate.

If none of these actions are successful in restoring the movement, press the "RT" button to reset the electronics and try again.

 **NOTE:** The controller will go into the sleep mode after several minutes of inactivity. To turn on the controller, press the "Home" button and check the lights are on.

 **NOTE:** Before storing the controller back in the suitcase, make sure the switch is in the OFF position (to the left) to avoid the battery from draining.

 **NOTE:** Each Remote Control is unique for every Robot. They cannot be used interchangeably.

6 Job execution

Once you have set up your RTS, and secured a connection between the RTS and the control panel, you are ready to start printing.

Prepare the RTS

Depending on your RTS model, the procedure you will have to follow will vary.

In all cases, you will need to set up the tripod on a secure surface, making sure the legs are static on the ground.

You will then need to set up the RTS on the tripod and level it properly.

You will be able to send commands to your RTS directly from the SitePrint user interface.

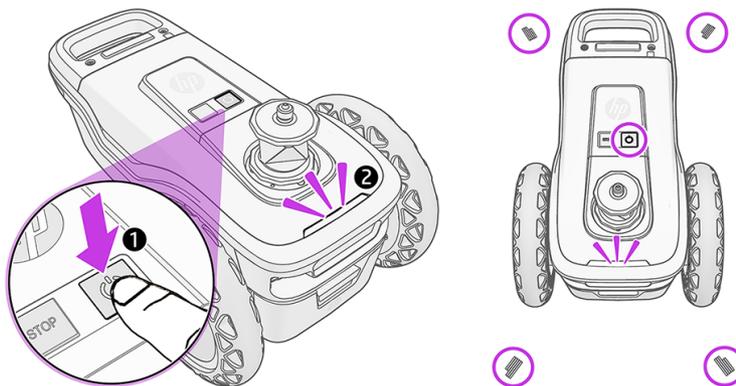
Set up communication between robot and RTS

The robot and the RTS can communicate with each other.

- The robot has an onboard modem and is a Wi-Fi hot spot connection.
- The robot and the RTS communicate by Bluetooth.
- The robot connects to the Internet and can access the HP SitePrint Cloud through the 4G modem.
- The HP SitePrint Cloud is used to set print preferences, submit files for printing, and initiate two-way communication between robot and RTS.

1. Turn on the robot.

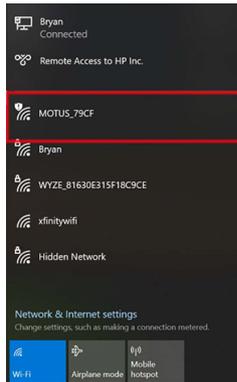
Once the robot is initialized, the power button and traffic lights turn white.



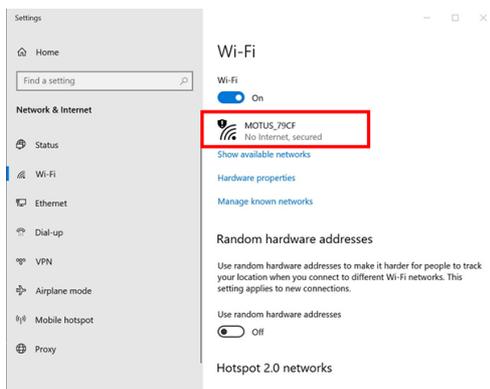
 **NOTE:** If the robot is picked up and moved after being turned on and placed in position for printing, the crash sensors will need to be reset using the remote control.

2. Start the Wi-Fi connection.

- a. Once the robot is initialized, the Wi-Fi connection becomes available. Select the robot's Wi-Fi network and enter the password found on the other side of the QR code included in the package, or alternatively on the sticker found on the HyperX joystick.



- b. Confirm the connection.

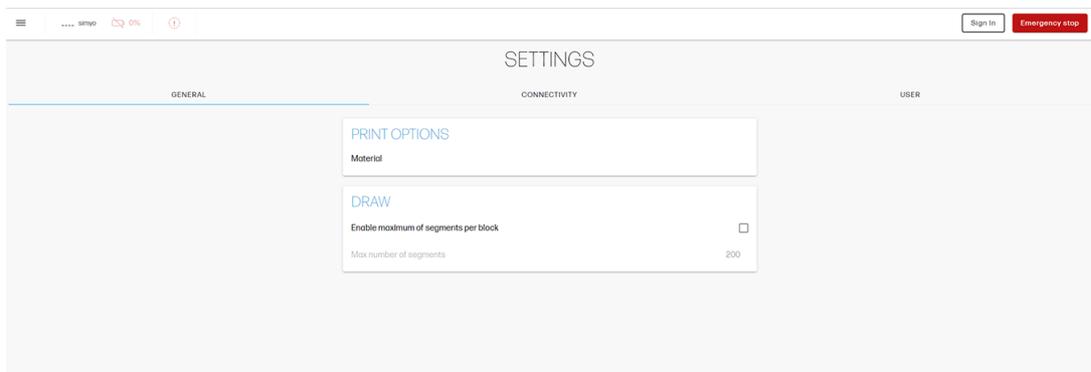


3. Access the HP SitePrint control-panel user interface.

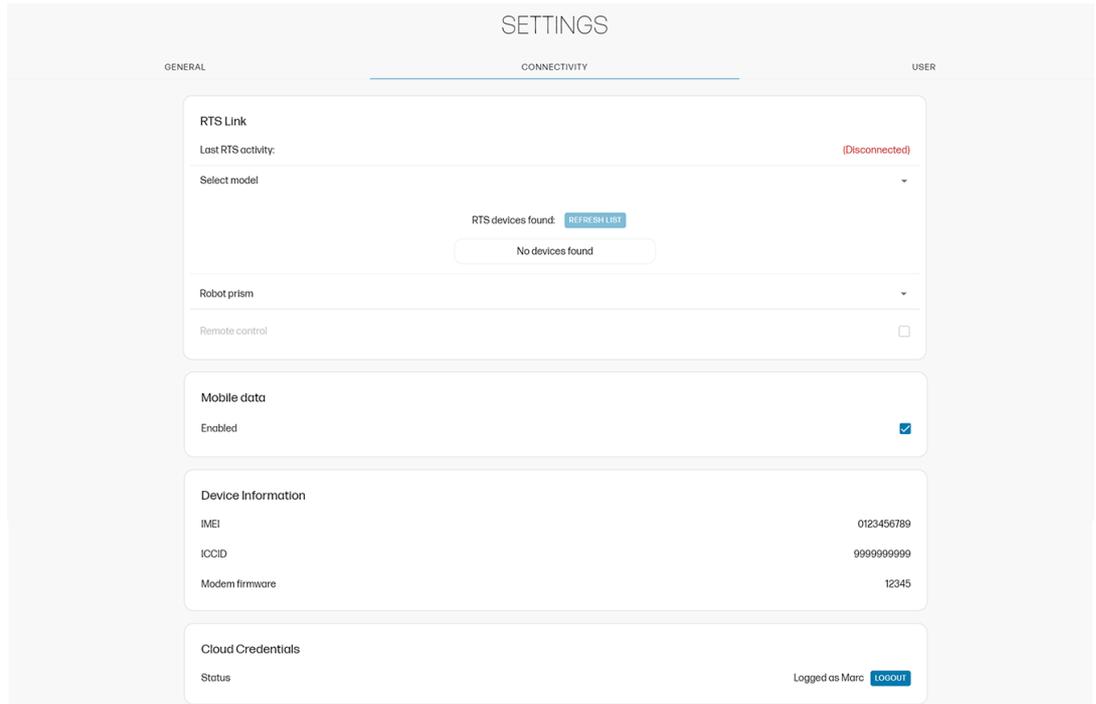
- a. Enter the URL <http://192.168.10.1> into your Chrome browser.

 **TIP:** For a better experience, save a direct access to this URL on your tablet's desktop, so that the application will run in full-screen mode.

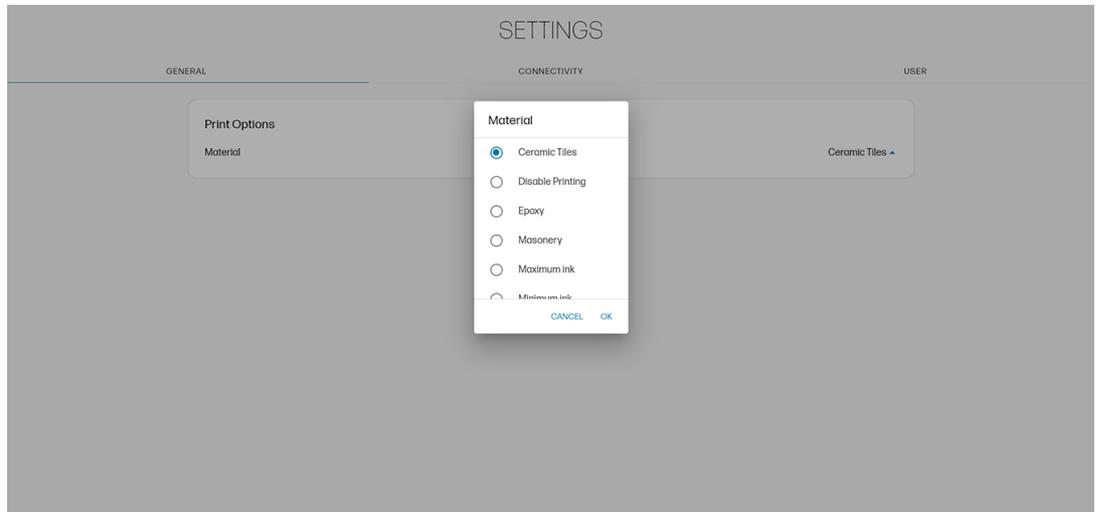
 **NOTE:** Remember that only the Chrome browser is supported.



- b. In the **Settings** section, **Connectivity** tab, check that your RTS is connected to the control panel. If not, connect it by selecting it from the drop-down menu.



- c. In the **Settings** section, **General** tab, check the printing preferences; you can change them if you like.



Set up the RTS

The Robotic Total Station requires some setup before use.

Planning your setup

Preliminary considerations.

- Check that the RTS has software and licenses suitable for use with the HP SitePrint Robot.
- Take some time to plan the job, keeping in mind the drawing, the printing area, the position of the reference targets, and visibility. This will probably save time overall.
- HP highly recommends placing the RTS at a position with visibility of at least three control points.
- HP also recommends that the control points are further from the RTS than the printing area.
- If possible, choose control points that form angles of around 60° from the position of the RTS.
- When aiming at a reflective tape target, avoid angles of less than 45° between the visual and the target plane.

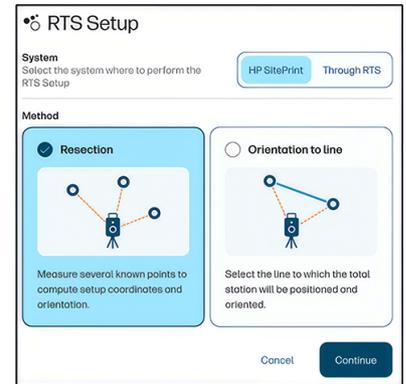
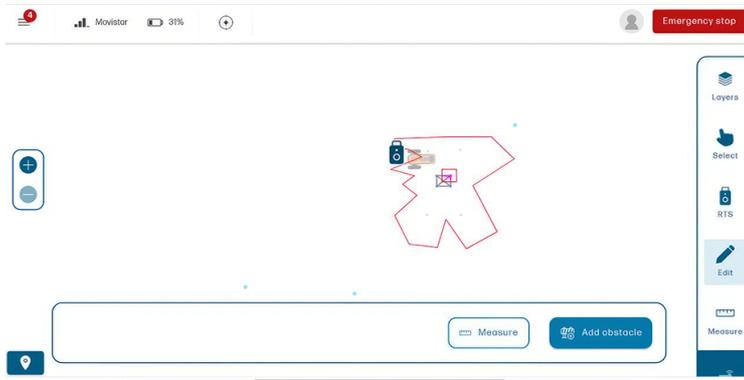
Setup using the Control Panel

Summary

1. Turn on the RTS.
2. Level the RTS following the RTS documentation. This step is crucial to guarantee accuracy in the layout print.
3. For a setup from the RTS by resection, enter the control points into the internal memory or make sure that the control points exist in your dxf drawing, so that the setup can be executed from the Control Panel.
4. Turn on the robot and connect your user-interface device to the robot by Wi-Fi.
5. Open the user interface by accessing <http://192.168.10.1> from the Chrome browser.
6. Click **Settings > Connectivity > Search**, and connect the robot to the RTS.
7. Set up the RTS by resection or orientation to a line, using the user-interface tools (if you have not already done it from the RTS). You can set up the RTS by Resection or Orientation to a line methods by using the SitePrint Control Panel. You can also set up from your own RTS by selecting "Through RTS" in the RTS Setup Menu in SitePrint Control Panel.
8. Aim the robot prism approximately, and click **Scan and lock HP SitePrint Robot prism**.

Setup step by step

Open the SitePrint user interface and access the drawing you intend to print.



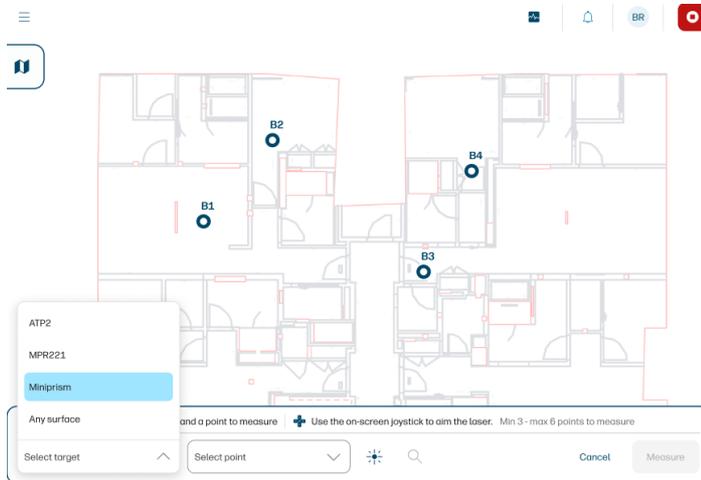
Here you can choose between the two supported methods of RTS setup: resection and orientation to a line.

You can also choose between doing the RTS setup from the SitePrint's control panel or from the RTS screen.

Resection

If you selected the resection method, follow these steps.

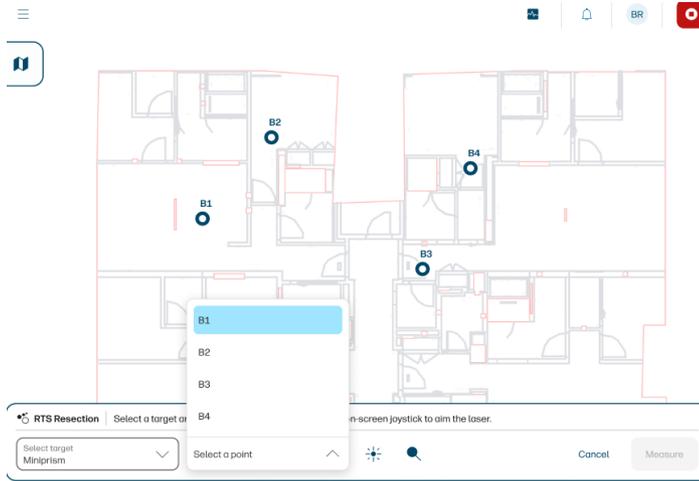
1. Select a target type from the list.



2. Select a control point from the list, or in the map, and aim the RTS approximately at that target.



NOTE: Your drawing must have defined control points to carry out this process.



3. Before clicking **Measure**, click the search icon 🔍 to make sure that the RTS has locked the prism, or ensure a good aim manually.
4. Click **Measure**, and repeat these steps with two or more other control points.



5. Click **Finish**.

At the end of the process, you will see a list of the position and quality values.

RTS Resection data

Position X	x.xxx m
Position Y	x.xxx m
Position Z	x.xxx m
Error X	x.xxxx m
Error Y	x.xxxx m
Error Z	x.xxxx m
Error in angle	x.xxxx °

OK

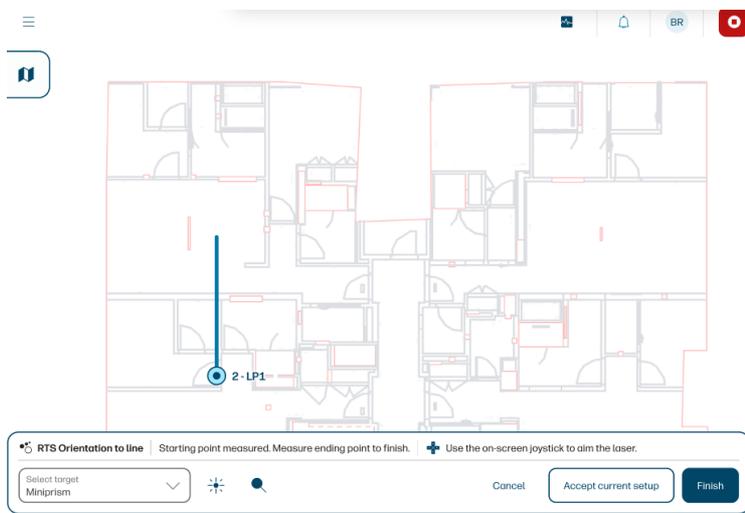
Orientation to a line

If you selected orientation to a line, follow these steps.

1. Select the line you want to use as a reference and click **Continue**.



2. Select the right target type for point 1, and aim the RTS at the target.



3. Click the search icon 🔍 to ensure that the RTS has locked the prism, or ensure a good aim manually.
4. Repeat for point 2.
5. Click **Finish**.

 **NOTE:** The **Accept current setup** option can be used if you upload a new version of a CAD file. This option restores the setup coordinates of the RTS.

6. The RTS position after orienting to a line is displayed. Click Accept to end the process.

RTS Orientation to line data

Position X	x.xxx m
Position Y	x.xxx m

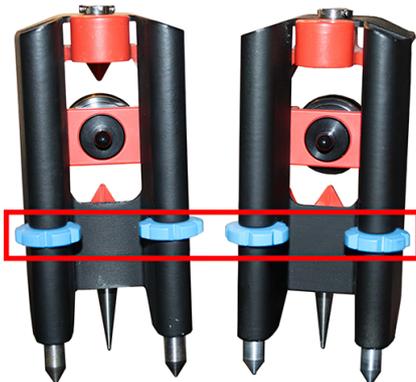
Using miniprisms to set up

If there are no fixed references or control points to aim at on the construction site, you can use the mini-prisms to set a reference line.

1. Mount the mini-prisms onto bipods, and install mini-prism pointers onto the mini-prisms.



2. Rotate the leveling screws left or right to level the bipods.



From above the bipod, you can see the leveling bubble and the mini-prism mounting screw.



The Control Panel user interface

The Control Panel is a web-based application that you can access from any device connected to the Robot's Wi-Fi. To guarantee the best possible experience, it is advised to access it from a 10" Tablet in landscape mode.

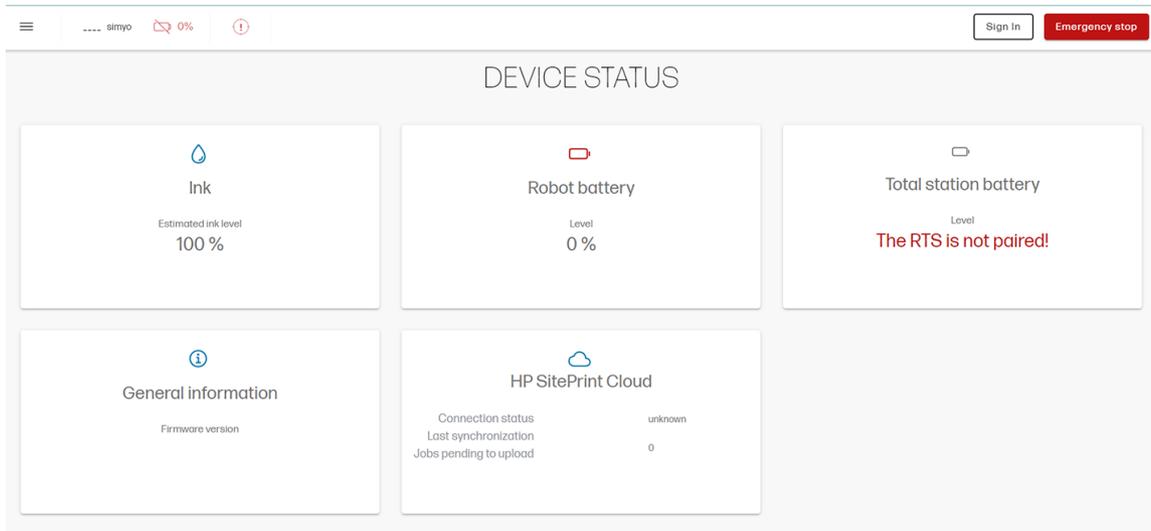
NOTICE: Only the Chrome browser is supported.

1. Enter the URL <http://192.168.10.1>.
2. Enter your username and password when prompted.

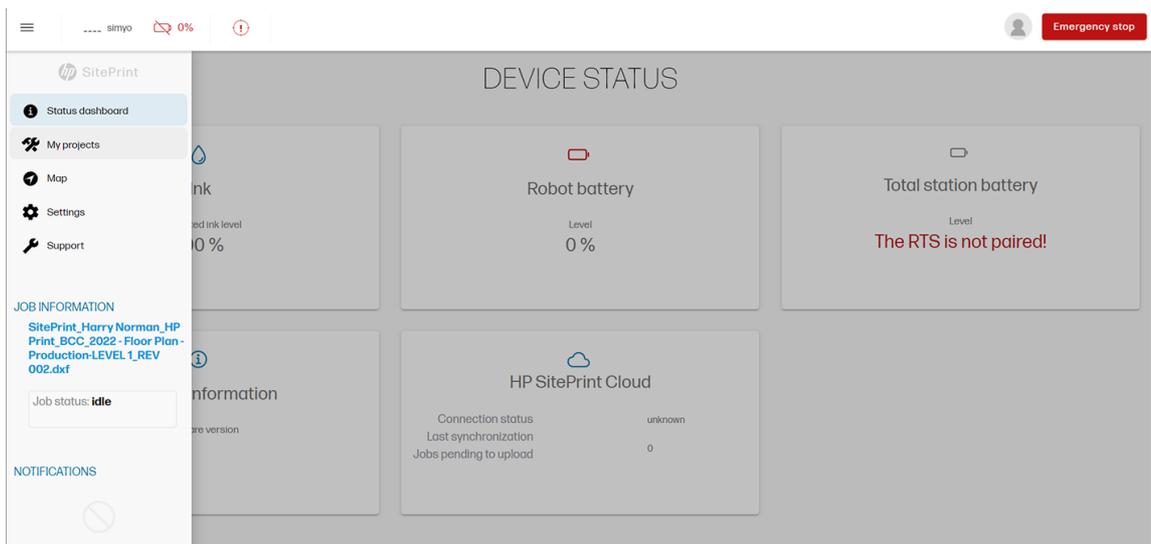
Retrieve a file and submit it for printing

The procedure for printing a file.

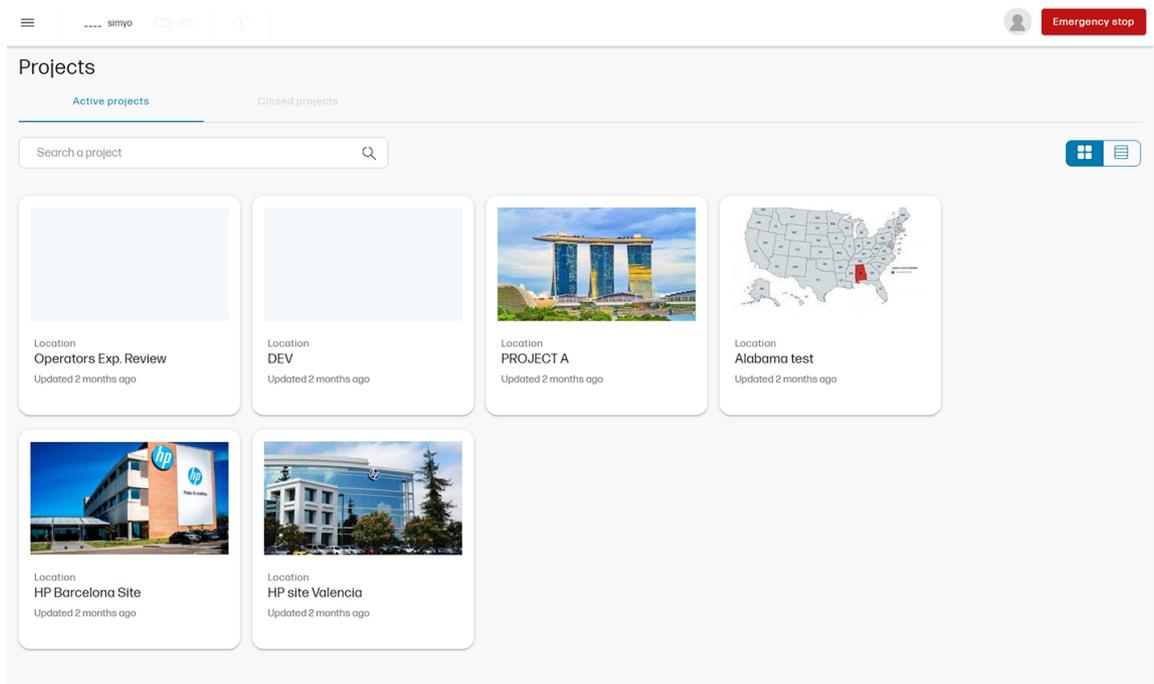
1. From the control-panel dashboard, tap the menu icon  at the top left.



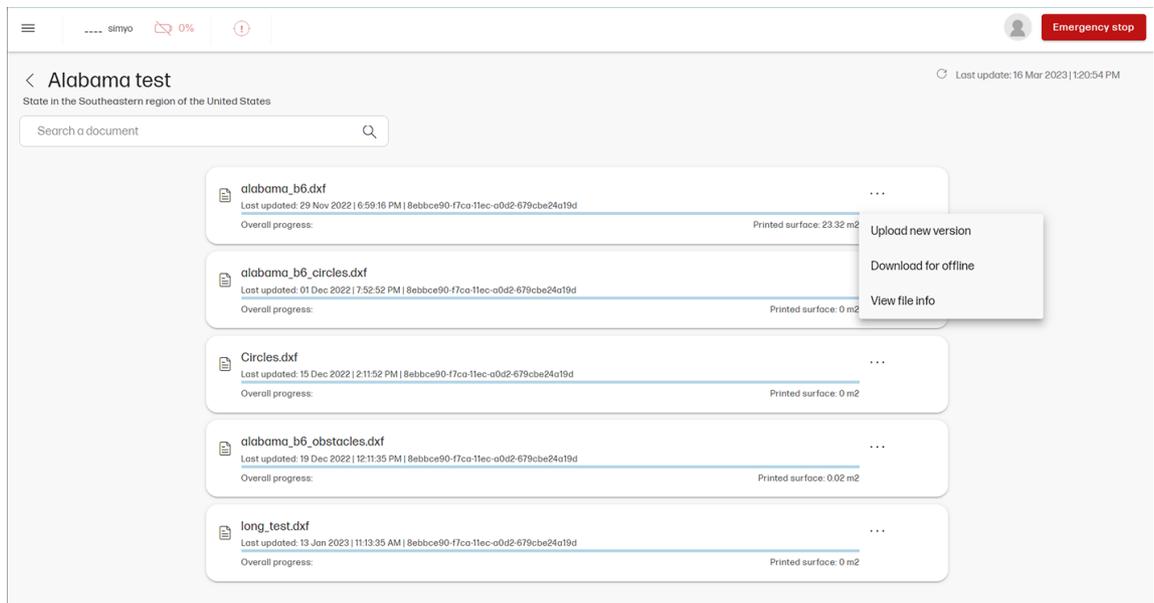
2. Tap **My projects** in the left panel to access your project repository.



3. Tap any of your projects to see the drawings they contain, or create a new project.



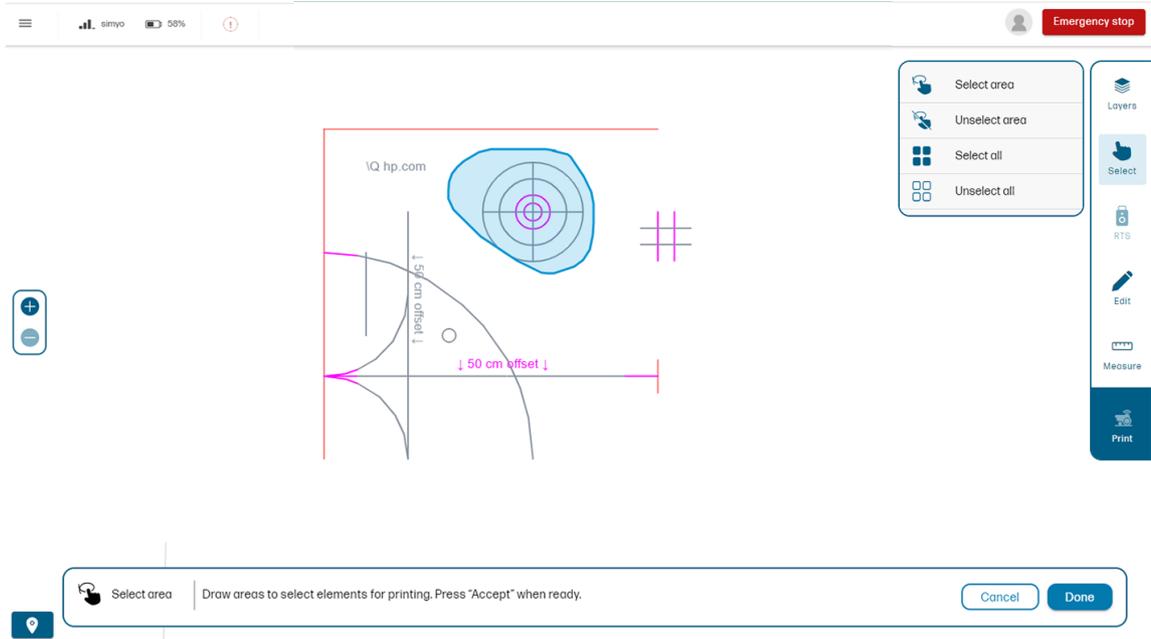
4. You will find a list of drawings in the project folder. If you tap the ellipsis icon \dots , you can upload a new version of the drawing, download it to work offline, or view information about the file.



5. You can tap anywhere else in the drawing box to open the drawing.
6. Click **Select**, then choose from the options available:
- **Select area** by enclosing it with your finger.
 - **Unselect area** by enclosing it with your finger.

- **Select all** to select all printable lines in the drawing.
- **Unselect all** to unselect everything.

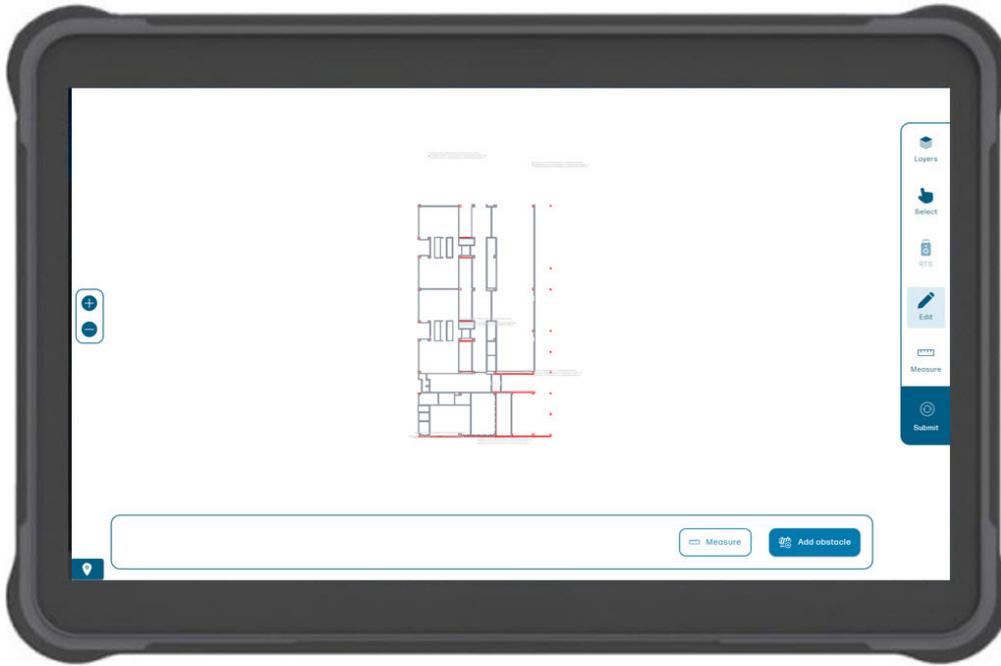
The selected lines turn blue.



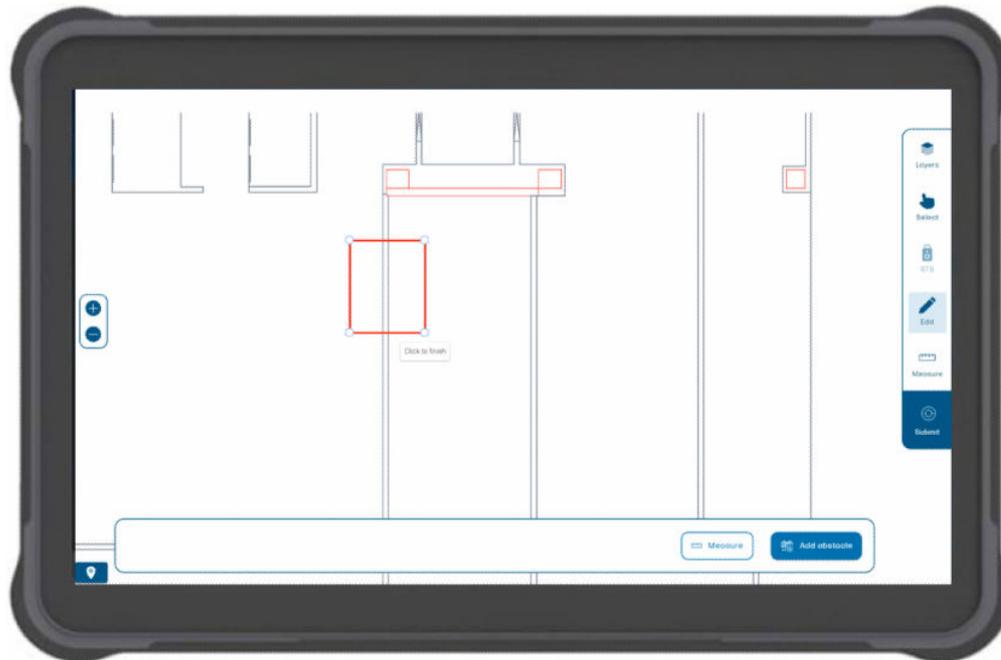
7. Tap **Done** to confirm the selection and send it to print.
8. While the robot is printing:
 - Green lines show what has been printed successfully.
 - Intermittent lines show what will print next.
 - Yellow lines (if any) show what has failed to print.

Editing obstacles

By clicking in the **Edit** section, you can create obstacles by tapping **Add obstacle**. The **measure** button allows you to measure its distance in relation to other elements in the drawing.

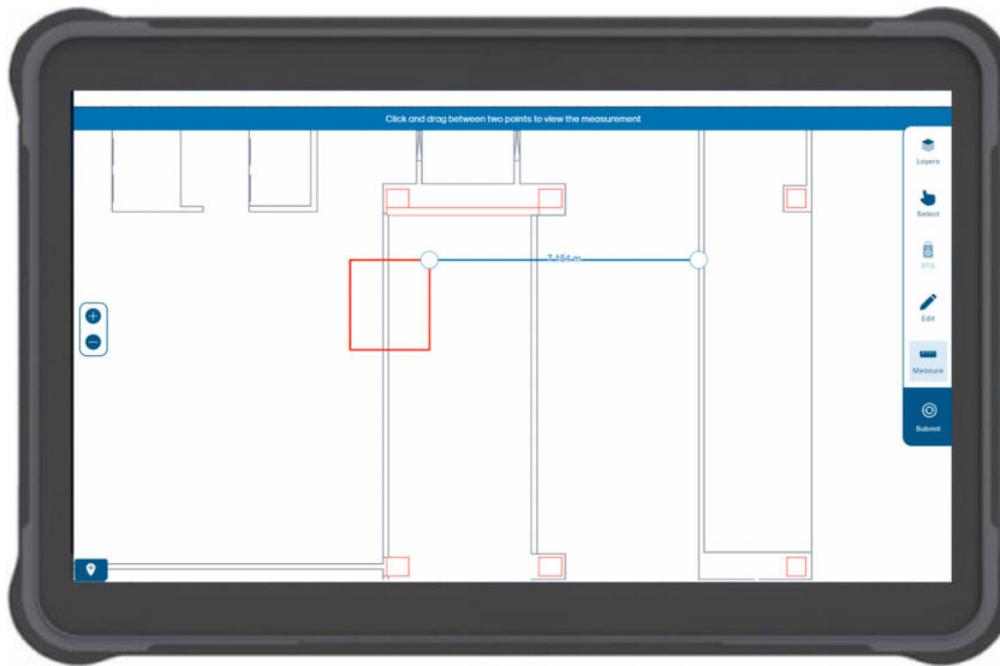


Click on one vertex of the obstacle and drag to the opposite corner. Once done, you can rotate, change dimensions, move, or delete this obstacle. The drawing will automatically be saved as a new version in your system.



Taking a measure

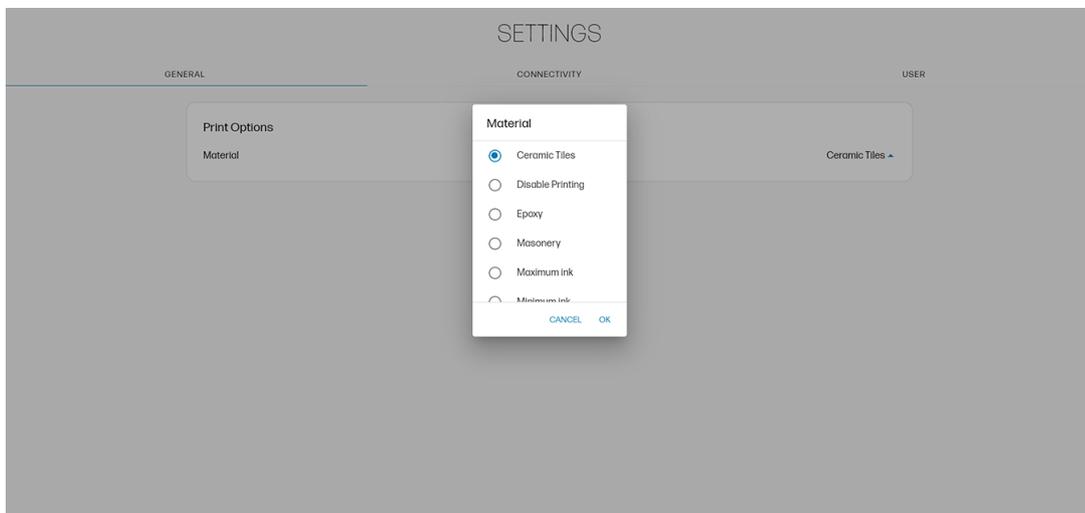
To take a measure, click on any part of your obstacle or other drawing parts, and drag to the element you want to measure it to. The tool will automatically snap to the lines as you approach the finger to them.



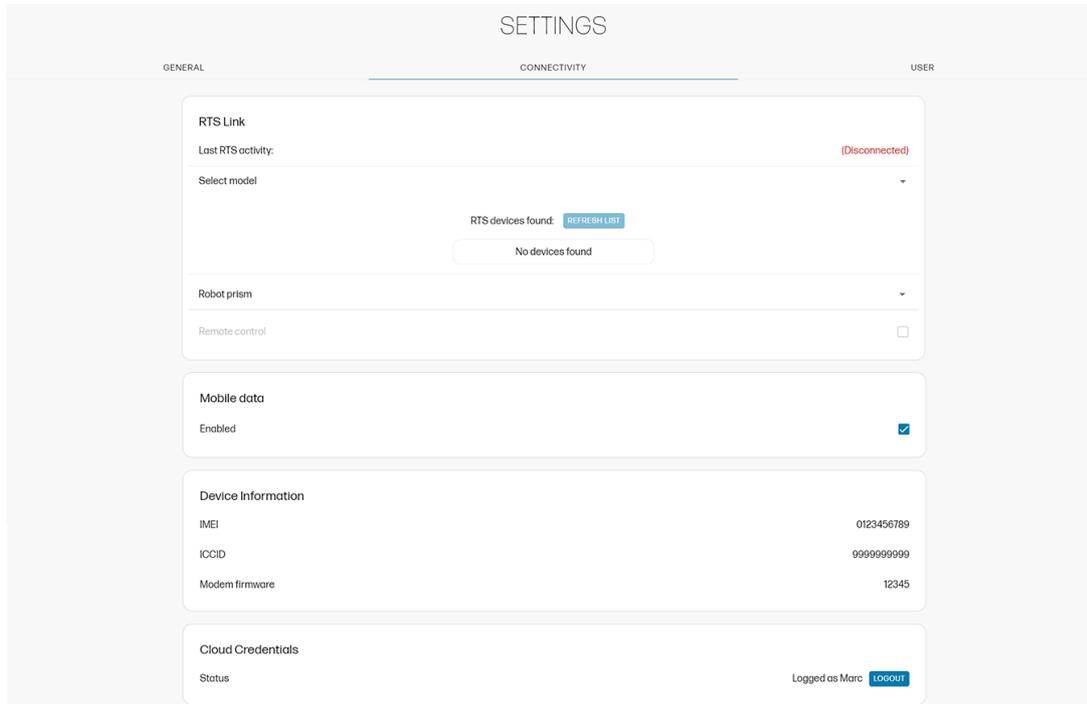
Settings

The settings page has three tabs: **General**, **Connectivity** and **User**.

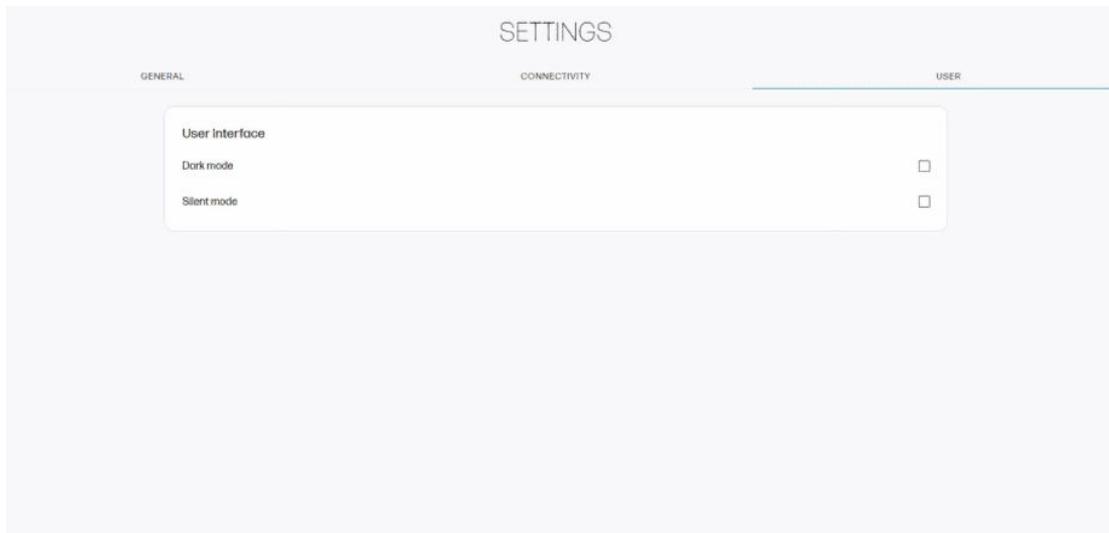
- The **General** tab includes print options. From the drop-down menu, choose the type of pavement of your jobsite, to optimize the ink pressure and quantity delivered.



- The **Connectivity** tab is for connection with the RTS and the Internet. Here you can find your HP SitePrint Cloud username and password, and your device information.



- The **User** tab has simple user-interface options:
 - **Dark mode**: To switch the interface to black.
 - **Silent mode**: To turn off auditory signals from the tablet's UI.



Support

On the support page, you can open a support case if you encounter a technical issue while using the robot.

There are two main tabs: **General** and **Software updates**. As you scroll down the **General** tab, you will find:

- **Open support case:** Allows you to generate a support case ID to receive support from your HP Partner in a matter of hours or minutes.
- **Diagnostics package:** Will help the HP team offering you support. Use only with the guidance of the HP team.
- **Print files:** Allow you to select a DXF file to test the accuracy of the robot, without needing to provide your username.
- **Ink system care:** Allows you to check the performance of the nozzles, purge the ink system for long-term storage or transport, and perform a nozzle recovery if necessary.
- **Print files:** Allows you to select a pre-design file to print for testing purposes.

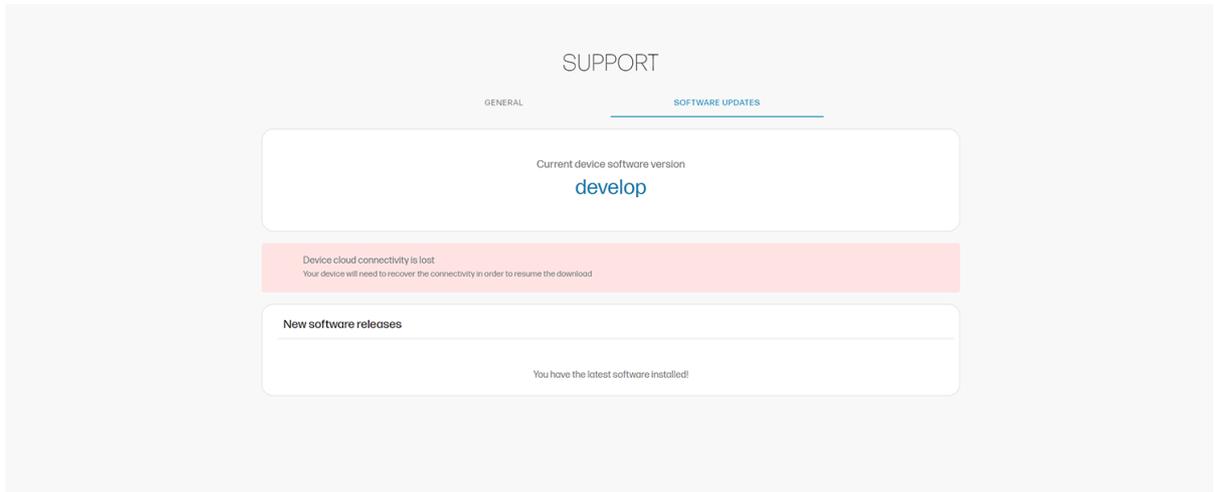
The screenshot shows the 'SUPPORT' page with two tabs: 'GENERAL' (active) and 'SOFTWARE UPDATES'. The 'GENERAL' tab contains four sections:

- Open support case:** Includes a text input for 'Phone number', a dropdown for 'Select project', and an 'Open case' button. Text: 'Confirm your phone number and specify the project you are working on to open a support case. Your HP SitePrint Specialist will contact you shortly.'
- Diagnostics package:** Includes a 'Download' button. Text: 'The diagnostics package is meant to be used only by HP Support personnel in order to give you assistance and should be extracted under HP Support guidance.'
- Print files:** Includes a dropdown for 'Select project' and a 'Load' button. Text: 'Select a diagnostic file to print a test plot.'
- Ink system care:** Includes a 'Purge' button and a 'Nozzle recovery' button. Text: 'Flush ink to remove trapped air or fluid in the system. Execute to change ink type, after long periods of inactivity, before shipping, or prior to long term storage.' and 'Ejects ink to remove particles in nozzles. Wipe clean the nozzles as a de-clogging procedure first.'

Under the **Software updates** tab, you can find your current firmware version along with the new software releases available, in case you want to upgrade firmware or software.



NOTE: It is mandatory to perform a firmware update before using SitePrint for the first time.



Current limitations

These limitations may be removed in future.

- Current firmware prints only upper-case letters: lower-case letters are skipped.
- Radio communications interference may occur while the robot is printing, causing some lines not to be printed.
- Characters and graphics have a minimum size: they cannot be printed successfully if smaller.
- Elements cannot be printed within 20 cm (7.9 in) of an obstacle.

Currently, there are certain surfaces that can mistakenly trigger the detection of a cliff and cause a safety stop. These known surfaces are the following:

- **Reflective surfaces:** Extremely reflective surfaces such as mirrors, polished metal or any other highly reflective surfaces.
- **Dark surfaces:** Dark spots, obscure surfaces, and dark colors can accidentally activate the safety stop. Screens from mobile devices can also trigger this safety detection.
- **Water puddles:** In certain weather conditions, puddles can act as a mirror and activate the safety detection.

There are several possible workarounds if a false-positive safety stop is triggered.

If SitePrint stops during a job and the 4 sensors are not emitting light, perform the following checks:

1. Check if any area around the robot has a dark/reflective spot.
2. Pick up the robot from the handle and move it away from the specific area. The drive wheels are disabled so manual control won't be available.
3. If you need to manually control the joystick after relocating, press the SELECT button on the joystick.
4. Drive the SitePrint away with the joystick and resume printing.

 **NOTE:** It is not necessary to reboot the robot if it stops. Relocating it from the spot will restore its functionality.

To mitigate behavior in conflictive areas, the following actions can be taken:

- Cover potentially conflictive spots and dark surfaces.
- Define potentially conflictive areas in the jobsite as obstacles in the HP SitePrint UI.

7 Robot maintenance

How to maintain your robot.

Cleaning the printhead

After every daily use of the robot, it is mandatory to clean the printhead with ethanol or isopropanol.

Daily printhead cleaning

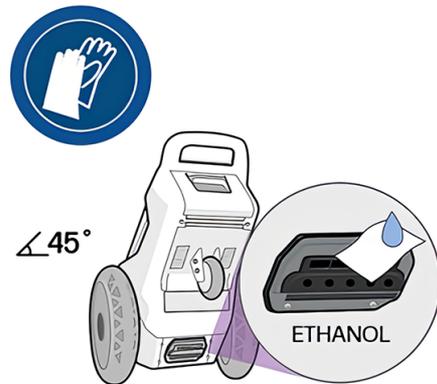
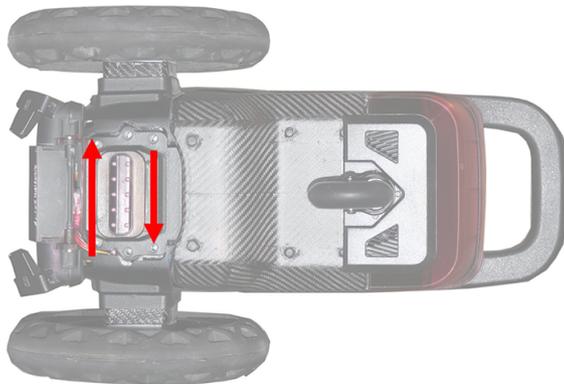
This maintenance process will remove dust, ink, or other substances that can block the nozzles and create print-quality issues. Printhead wiping should be done with a lint-free cloth.

The battery cover must be removed before cleaning the printhead. The ethanol used to clean the printhead will damage the battery-cover sealing foam.

Clean the nozzles and the metallic plate in the direction of the arrows, and repeat four or five times until you are sure that they are clean.

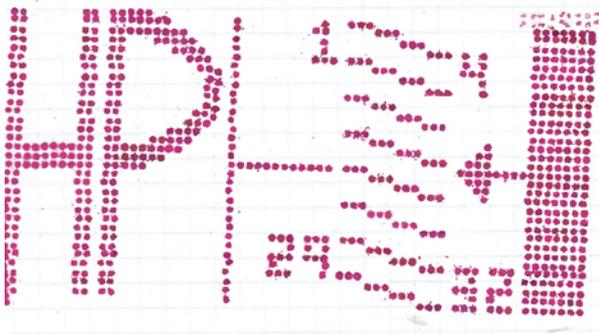
 **NOTE:** The same cleaning fluid must be used, whether you are using water-based or solvent-based inks.

 **TIP:** HP strongly recommends wearing gloves throughout these cleaning operations.



Nozzle health check

1. When you suspect that some nozzles are failing, HP strongly recommends printing a nozzle health plot. The pattern shown below is printed twice (with more and less ink). Place an A4 or larger sheet of paper under the robot so that you can see the results and share them with your support representative if needed.



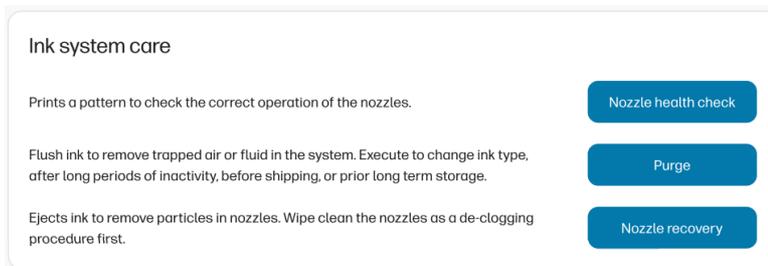
HP also recommends printing a nozzle health plot before every journey with the robot, especially if it has been stored for several days.

2. This plot helps to identify the blocked nozzles, so that you can clean them with a non-linen cloth and ethanol.

Nozzle recovery

After cleaning, reprint the nozzle health plot. If the issue persists, repeat the following procedure five times:

1. Apply cleaning fluid (ethanol) with a syringe (if available) over the nozzles; clean the nozzles with a wipe and ethanol.
2. Put the robot over a waste kit to prevent spilling ink on the floor.
3. At the control panel, click **Support > Ink system > Nozzle recovery**. All the nozzles will spit to remove excess ethanol and ink.
4. Reprint the nozzle health plot.



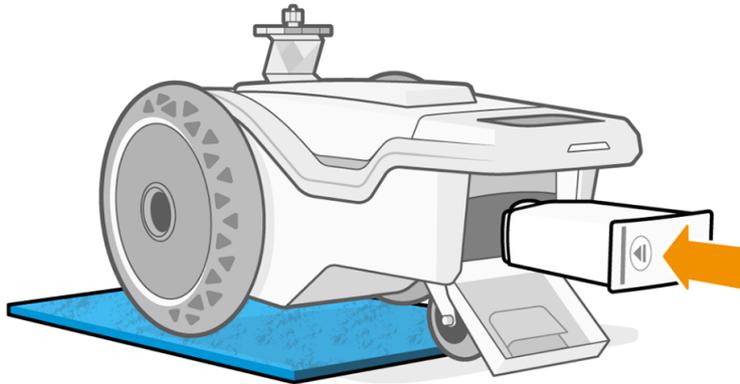
5. If the issue persists, leave the wet wipe for at least 1 minute over the nozzles, allowing liquid to enter the nozzles.
6. Clean the nozzles with a wipe and ethanol.
7. Reprint the nozzle health plot.

After recovering or before storing the robot, wipe once again to remove possible aerosol.

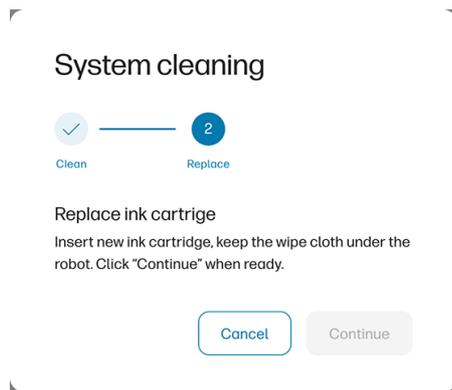
Purge the ink system

You will need a waste kit to perform this operation.

1. Select the **Support** page in the control panel.
2. Scroll down to **Ink system care** and tap **Purge**.
3. Place a waste kit under the robot and tap **Continue**.



4. When the printhead is clean, the control panel asks you to replace the ink cartridge. Tap **Cancel**.



5. The system cleaning will appear not to be completed. Tap **OK**. The process is done.

Check the safety sensors

The safety sensors are an important part of the robot because, in the event of a fall, they reduce risk by stopping the motors that turn the wheels.

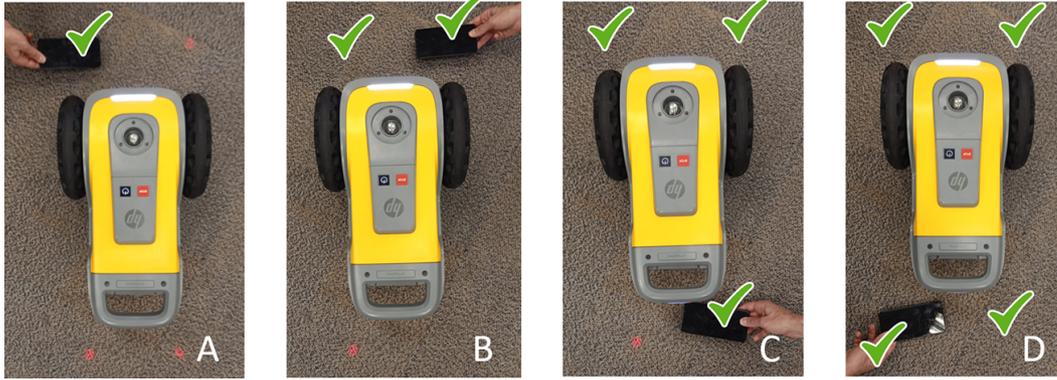
To ensure the correct operation of the safety sensors, it is mandatory to carry out a daily check in which you are asked to trigger the switch of each sensor.

This can be done by interrupting the safety sensor beam with a reflective black surface (such as a smartphone or tablet screen).

IMPORTANT: The sensors must be validated one after the other. If more than one are tested at the same time, you will not know the status of each sensor.

If any of the four sensors show persistent failure, stop using the robot and call your support representative. Operating the robot with a faulty sensor may result in a safety risk. HP will be exempt from any and all liability for the operation of the robot in this situation.

1. Turn the robot on. Check that it can be moved with the controller, and that the four red lights are on and pointing to the floor.
2. Place a reflective surface in front of the red light of one of the sensors (see image A).
3. Try to move the robot with the controller and check that it does not move (it should not).
4. Repeat with each of the other sensors.



 **NOTE:** This robot is equipped with a safety function to avoid falling over. Disabling this function may result in a hazardous operation. It is important to regularly clean and maintain the sensors as per the Robot Maintenance instructions.

Rebooting the system

It is possible that, in the event of an error or alert from the system, you will be prompted to reboot the system. While this action might resolve the issue in some cases, it might not always be effective.

Do not reboot the system more than 10 times in a short period. For security reasons, HP SitePrint will block itself after more than 10-15 reboots in less than 30 minutes.

To recover from this block, simply turn the robot off, wait around 15-30 minutes and turn it on again.

8 Firmware update

The robot's various functions are controlled by software that resides in the robot, also known as firmware.

One of the most important robot maintenance operations is to keep it up to date with the latest official firmware from HP.

In every release, a list of new features and enhancements is included.

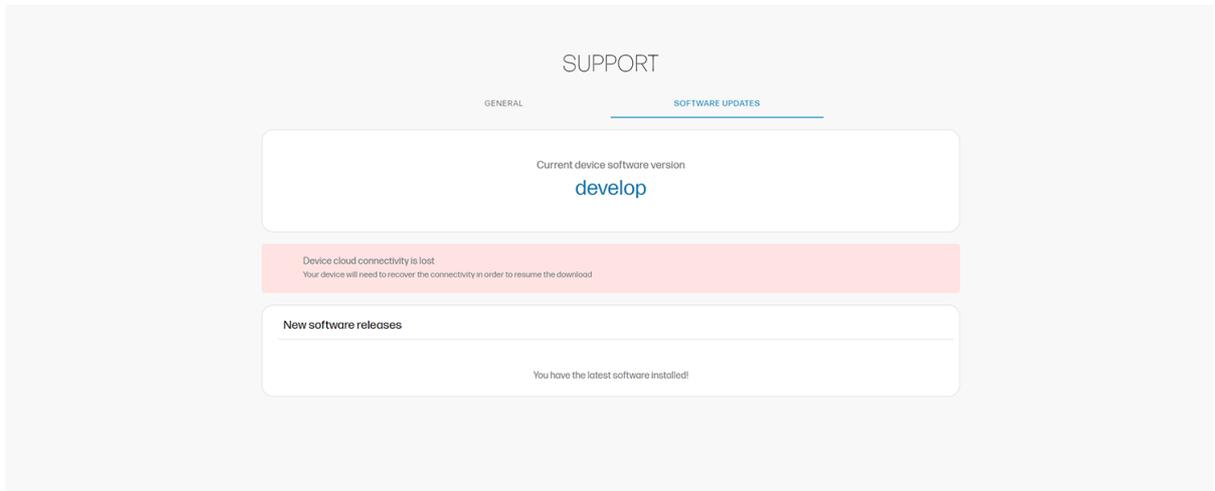
The process to update the robot is very simple. First, turn on the robot and connect it to the control panel by Wi-Fi using a supported device, such as a tablet computer.

 **NOTE:** You must log in to HP SitePrint Cloud in order to receive firmware updates.

 **IMPORTANT:** You must perform a firmware update before using SitePrint for the first time.

Tap **Support > Software updates**.

If a newer version is available, it will appear with the option to update.



9 Supplies and accessories

There are two alternative ways to order supplies or accessories.

- Visit <http://www.hp.com/> on the Web. There you will also see the latest list of supplies and accessories for your robot.
- Contact HP Support (see [When you need help on page 18](#)), and check that what you want is available in your area.

Trimble radio module

How to set up this accessory.

Components

1. Trimble radio module
2. Locking system
3. Radio module holder



1. Insert the locking system, making sure that the pins match the screw hole on the top.



2. Attach the component underneath the handle with the two screws provided.



3. Insert the radio module into the holder and tighten the screw from below.



4. Slide the holder with the radio module into the rails of the locking system.



5. Press the button to allow it to slide fully in.



10 Robot specifications

Here you can find the functional, physical, memory, power, ecological, environmental, and acoustic specifications of your robot.

Functional specifications

Details of the ink cartridges, ink supplies, printing speed, maximum print resolution, and other functional characteristics of the robot.

{TO BE ADDED}

Physical specifications

Details of the length, width, height, and weight of the robot, with and without packaging.

[TO BE ADDED]

Memory specifications

Details of the physical memory and hard-disk capacity of the robot.

[TO BE ADDED]

Battery-charger, battery, and robot power specifications

Power specifications of the robot, its battery, and its battery charger.

Battery-charger, battery, and robot power specifications

Characteristic	Specifications
Charger: Number of power cords	1
Charger: Input voltage	100-240 V (two wires and protective earth)
Charger: Input frequency	50-60 Hz
Charger: Maximum output voltage	17.4 Vdc
Battery: Nominal output voltage	14.4 Vdc
Battery: Nominal capacity	6.9 Ah, 99 Wh
Robot: Typical power consumption in operating mode	23 W
Robot: Power consumption in ready mode	17 W

Site voltage must be within the “Input voltage” range.

Ecological specifications

You can find the up-to-date ecological specifications of your robot at the HP website.

See <http://www.hp.com/sustainability>.

Environmental specifications

For successful operation, the robot should be kept within the specified range of environmental conditions.

Using the robot outside the specified range may cause print-quality problems or damage electronic components.

Robot environmental specifications

Type	Value
Relative humidity range when operating	20–80%
Temperature range when operating	Solvent-based inks: –10 to +40°C (14 to 104°F) Water-based inks: 0 to +40°C (32 to 104°F)
Temperature range when in storage	–20 to +55°C (–4 to +131°F)
Temperature gradient	no more than 10°C/h (18°F/h)
Maximum altitude when operating	2000 m (6600 ft)
Surface condition when operating	Dry
Storage conditions	Indoor
Battery charging	Indoor
Temperature range when charging battery	0 to 40°C (32 to 104°F)



NOTE: If the robot or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condense on the robot parts and cartridges and can result in ink leaks and robot errors. In this case, HP recommends that you wait at least 3 hours before turning on the robot or installing the ink cartridges, to allow the condensation to evaporate.

Acoustic specifications

Declared noise emission levels for the HP SitePrint Robot.

Sound pressure levels measured according to ISO 11201 and sound power levels measured according to ISO 3744.

Acoustic specifications

Characteristic	Status	Specifications
Sound pressure	Printing (lines)	55 dB(A)
	Standby	40 dB(A)

Acoustic specifications (continued)

Characteristic	Status	Specifications
Sound power	Printing (lines)	≤ 7.0 B(A)
	Standby	≤ 5.5 B(A)

Radio specifications

Characteristics of the robot's radio communications.

Radio specifications

Characteristic	Specifications
WiFi	Wi-Fi 6 (802.11ax)
Bluetooth	Bluetooth 5.2
LTE FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28
LTE TDD	B38/B39/B40/B41
UMTS	B1/B2/B4/B5/B6/B8/B19
GSM	B2/B3/B5/B8

Index

- A**
 - accessories 54
 - acoustic specifications 58
 - AutoCAD plugin 19
 - offsets 22
 - transformations 20
- B**
 - battery
 - insert 25
- C**
 - CAD file
 - prepare 19
 - components of product 15
 - control panel
 - access 39
 - introduction 9
 - settings 44
 - support 45
 - customer care 18
- D**
 - daily printhead cleaning 49
 - documentation 1
- E**
 - ecological specifications 58
 - editing obstacles 42
 - environmental specifications 58
- F**
 - firmware update 53
 - functional specifications 57
- H**
 - hard disk specifications 57
 - HP Customer Care 18
 - HP SitePrint Cloud
 - introduction 10
 - login 19
- I**
 - ink cartridge
 - insert 26
 - specification 57
 - ink system
 - purge 50
- J**
 - job execution 31
- L**
 - labels, warning 7
 - layer breakout 19
 - limitations 47
- M**
 - manuals 1
 - memory specifications 57
- N**
 - Nozzle health check 49
 - Nozzle recovery 50
- O**
 - orientation to a line 37
- P**
 - physical specifications 57
 - power specifications 57
 - prepare the robot 24
 - print a file 39
 - printhead
 - specification 57
 - printhead cleaning 49
 - printing speed 57
 - prism
 - insert 28
 - product components 15
 - purge the ink system 50
- R**
 - radio specifications 59
 - reference-line setup method 38
 - remote control 29
 - Resection 35
 - robot
 - box contents 15
 - components 15
 - limitations 47
 - preparation 24
 - turn on 29
 - views 16
 - robot-RTS communication 31
 - RTS
 - compatibility 24
 - prepare 31
 - RTS setup 34
- S**
 - safety precautions 1
 - safety sensors, check 51
 - sensors 17
 - site preparation 24
 - specifications
 - acoustic 58
 - ecological 58
 - environmental 58
 - functional 57
 - hard disk 57
 - ink supplies 57
 - memory 57
 - physical 57
 - power 57
 - printing speed 57
 - radio 59
 - storage 8
 - supplies 54
 - support services
 - HP Customer Care 18
- T**
 - Taking a measure 43
 - telephone number 18
 - telephone support 18
 - transportation 8
 - Trimble radio module 54
- U**
 - use of the remote control 29
- W**
 - warning labels 7
 - welcome to your robot 1