

# Humboldt Concrete Maturity Sensor



## How to Register:

Visit [www.cmots.ca](http://www.cmots.ca) and click on Register.

Please sign in Version:1.5.95

demo

....

Time Zone : -4

Remember username and password

Login Register

[⇒ Forgot password?](#)

Fill out the registration form and click **Register** at the bottom. This will create a Mother account which is a step below Administrator account. Sub Account (discussed later) is created by the Mother account holder.

 Temperature & Strength Monitoring Platform

User has already registered account? You can [Login](#)

\*Username:   
4 – 18 characters, including letters, Numbers, underscores, begin with a letter, letters or Numbers ending!

\*Email:   
Enter an email address that you already have, in order to complete registration. Format such as name@example.com

\*Telephone:   
Enter your mobile phone number. Format such as 12345678910

\*Password:   
6 to 16 characters and is case sensitive

\*Confirm :   
Please enter the password again

\*Code:   
Is not case sensitive. Can't see clearly can change one

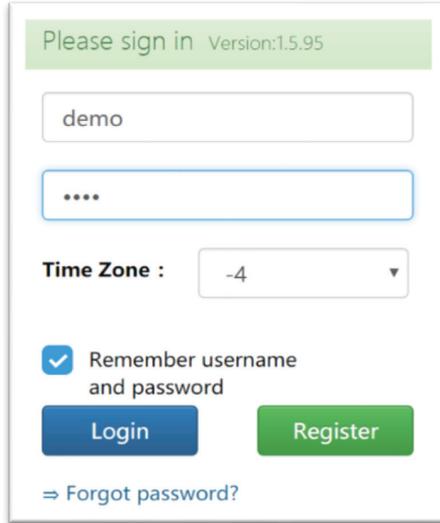
I agree with "The terms of service" and "Privacy and personal information to use policy"

Save

Copyrights © 2018 Cmots

## Login to Portal

Registered users can access the C<sup>MOTS</sup> portal by visiting [www.cmots.ca](http://www.cmots.ca) and login by using their Username and Password, created during registration process. Pay attention to your local time zone with reference to UTC in the login window. If your time zone is UTC-6, choose -6 from drop-down menu below Password.



Please sign in Version:1.5.95

demo

....

Time Zone : -4

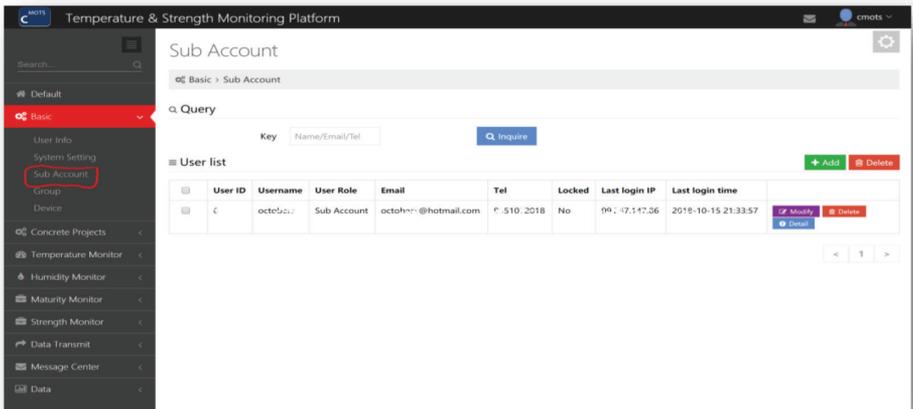
Remember username and password

Login Register

⇒ Forgot password?

## Create Sub Account

There are two types of sub accounts that can be created by Mother Account — Sub Account and Sub Account (Only the query function). Only difference between the two is the ability of the Sub Account to Add Device, which is not available in Sub Account (Only the query function).



Temperature & Strength Monitoring Platform

Sub Account

Basic > Sub Account

Query

Key: Name/Email/Tel Inquire

User list

User ID	Username	User Role	Email	Tel	Locked	Last login IP	Last login time	
1	octob201	Sub Account	octob201@hotmail.com	1-510-2018	No	99:17:117.26	2018-10-15 21:33:57	<a href="#">Add</a> <a href="#">Delete</a>

Sub accounts are created in Mother Account for limited access by select individuals. There are two types of sub accounts - Sub Account and Sub Account (Only the query function). Only difference between two is that Sub Account can add devices in the portal. Access to Sub Account can be blocked by checking the Locked box.

The 'Edit' form contains the following fields and options:

- Username:** Text input field.
- User Role:** Dropdown menu with 'Sub Account(Only the query fi' selected and 'Sub Account(Only the query function)' highlighted.
- Email:** Text input field with 'Sub Account' entered.
- Tel:** Text input field.
- Locked:** Checkbox, currently unchecked.
- Password:** Text input field.
- Add:** Button at the bottom right.

## Change Password

### Basic – User Info

The 'User Info' page displays the following information:

- Navigation:** A sidebar menu on the left with 'Basic' selected and 'User Info' highlighted. A red circle highlights the 'Basic > User Info' breadcrumb.
- Common Information:**
  - ID: 5
  - Username: cr-ots
  - Email: haroon@cr-ots.com
  - Session ID: b776e1e513af49c25ad4598206921491
  - Tel: 4152346144
  - Login Information: 95.247.147.56, 2315 10-22 12:02
- Account Settings:**
  - Old password: [input field] ✓
  - New password: [input field] ✓
  - Change Password:** Button

## Add Device

If your account permits you to add device, you can do so as follows.

**Basic - Device** and then Add

Ignore Date/Time Expire in last column shown in figure below

Device Name and Group can be modified later when assigned to projects.

Temperature & Strength Monitoring Platform

Device Management

Basic > Device

Query

Type of Device: Default Key: Name/IMEI/SN Inquire

Device List

Device Name	IMEI/SN	Type of Device	Group	Date/Time Created	Date/Time Expire	Actions
06180337	06180337	TZ-TAG06	Default	2018-10-11 11:18:42	2019-01-12 11:18:42	Modify, Delete, Detail
06161076	06161076	TZ-TAG06	October 3 Group	2018-10-09 21:39:49	2019-01-10 21:39:49	Modify, Delete, Detail
06181461	06181461	TZ-TAG06	Default	2018-09-29 10:59:19	2018-12-31 10:59:19	Modify, Delete, Detail

Click Add. Choose TZ-TAG06 from dropdown menu (for temperature, maturity and strength determination).

Edit

Device Name:

IMEI/SN:

Type of Device: TZ-TAG06

Group: Default

Device Password: 000000

Data Interval(minute): 1

Remark:

Add

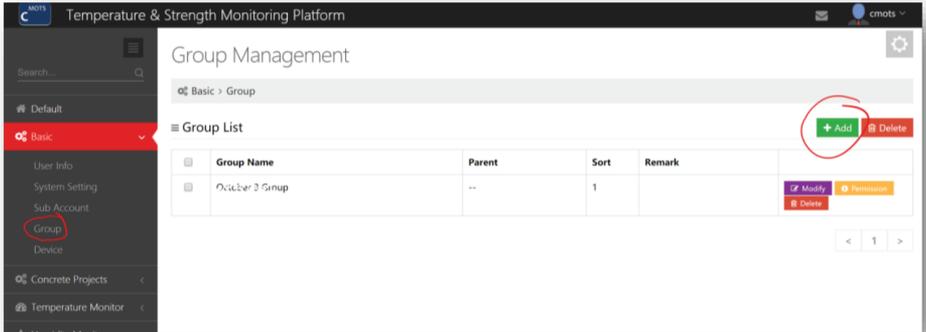
## Change Settings

Do not change settings

## Add Group

When devices are assigned to various projects, a good strategy is to create groups for easy identification. This may require creating multiple Groups. Note from the Add Device section that Group name is required when a device is added.

You can add Group by clicking Basic – Group and then Add



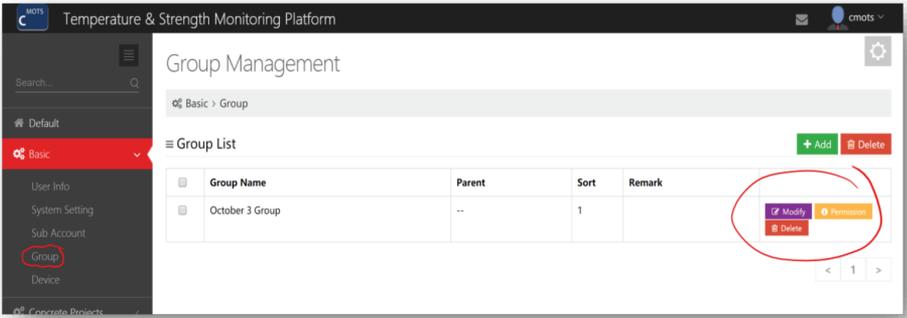
Click Add and select Default as Parent if this is the first time you are creating a Group. For the next one, you can either choose Default as Parent Group or choose an existing Group as Parent Group.

The 'Edit' dialog box contains the following fields:

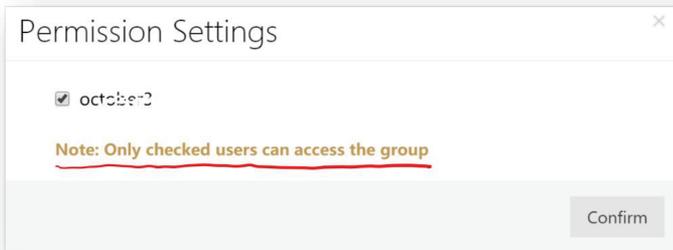
- Group Name:
- Parent:
- Sort:
- Remark:

An 'Add' button is located at the bottom right of the dialog.

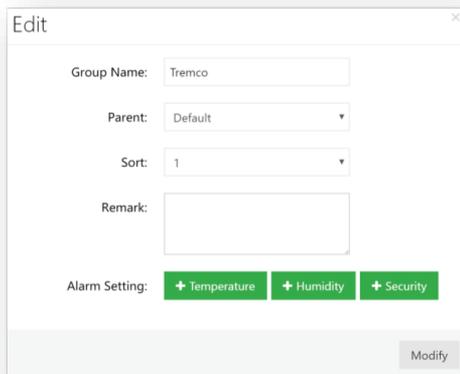
Once a Group is created, permission to access the Group is granted to relevant Sub Account by clicking Basic - Group and then Permission.



All Sub Accounts you created will be listed here. You can choose any number of Sub Account you feel necessary to give access to a Group by checking the relevant boxes.



Group can be renamed or moved to different Parent Group by clicking Basic - Group and then Modify. You can also set Alarms here.



## Add Maturity and Strength Option

When temperature measuring device is used for real-time monitoring of maturity and strength of concrete, the probe is embedded in fresh concrete and additional information is added in the system as follows:

Concrete Projects – Project Management – Add

Temperature & Strength Monitoring Platform

Project Management

Concrete Projects > Project Management

Query

Project: Default Structure: Default Location: Default

Inquire + Add Delete

Device	Mix	Project	Structure	Location	Start Time	End Time	Description	
06181461(06181461)	Test 1(Test 1)	Pearson	Runway	Panel 3	2018-10-09 15:46:00	2018-10-31 15:46:00		Modify Delete
06161076(06161076)	Test 1(Test 1)	Billy Bishop	Terminal	Wall A	2018-10-09 15:43:00	2018-11-10 15:43:00		Modify Delete

You can create new Project, Structure, and Location by clicking on “+” or you can choose an existing Project, Structure, and Location from the respective dropdown menu.

Edit

Device: 06180337(061803) ▾

Mix: Test 1(Test 1) ▾

Select: Project ▾ > Structure ▾ > Location ▾ +

Start Time: 2018-10-14 22:33 📅

End Time: 2018-10-21 22:33 📅

Description:

Add

This screen appears when you click on “+”



Add concrete mix design identification in Mix. Make sure this mix design information is already added in the Mix Design Data (discussed later). Once added, the system will automatically connect this added device and the Mix.

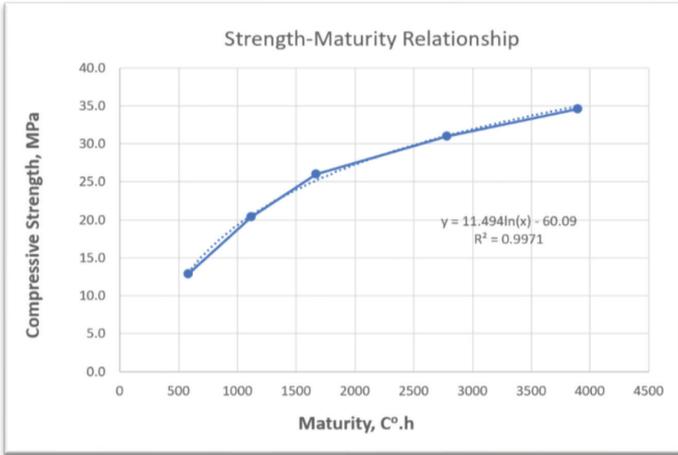
Start Time refers to the time when fresh concrete comes in contact with the sensor and NOT the time when probe was installed. It is important to enter precise Start Time (and date) since  $C^{MOTS}$  will start calculating maturity and strength for this location from this time onwards. End Time is the time when system will stop taking further readings for this device. One month is generally a good time frame for this purpose but depends on user requirements. Enter 8-digit device identification in Device. You can add more details about concrete pour in Description section.

## Add Mix Design Data

If real-time maturity and strength of concrete is desired, the Strength-Maturity relationship should first be established in the lab in accordance with ASTM C1074, Standard Practice for Estimating Concrete Strength by the Maturity Method. The resulting relationship is in the following form:

$$\text{Strength} = A * \ln (\text{Maturity}) + B$$

A sample relationship is shown below where  $A = 11.49$ , and  $B = - 60.09$



Each concrete mix has its distinct set of Parameters A and B so use values of these parameters (Concrete Projects – Mix Design Data – Add New Mix) from your Strength-Maturity relationship.

Edit ✕

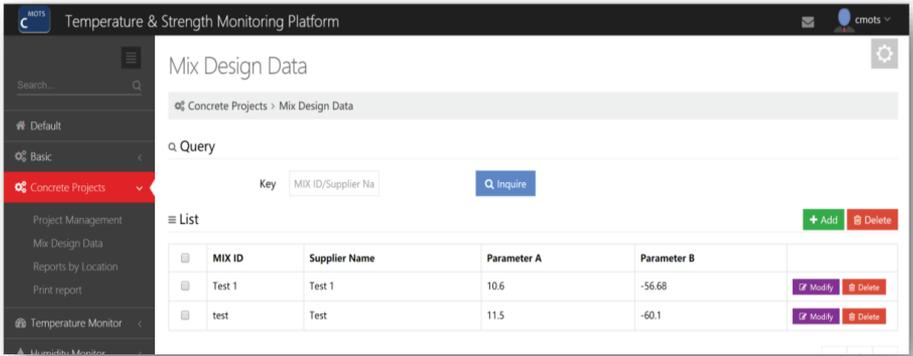
Mix Supplier:

Mix ID:

Parameter A:

Parameter B:

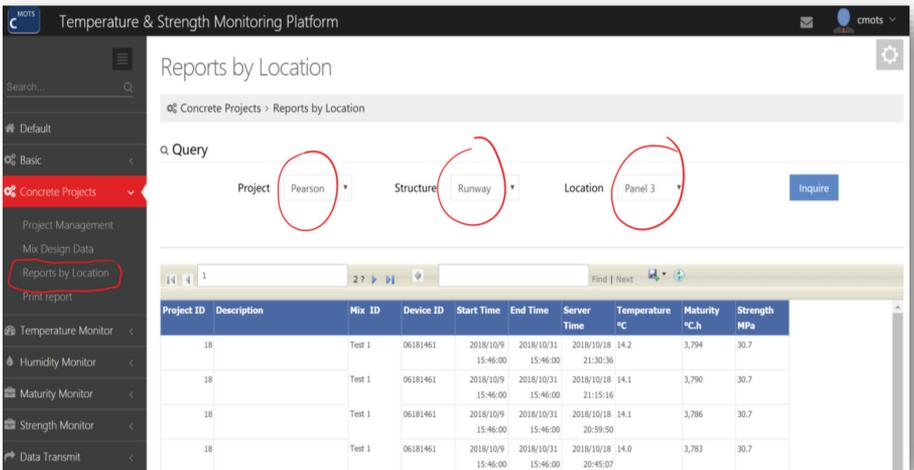
Once added, the concrete mix design can be assigned to devices using Mix ID (as Mix noted above).



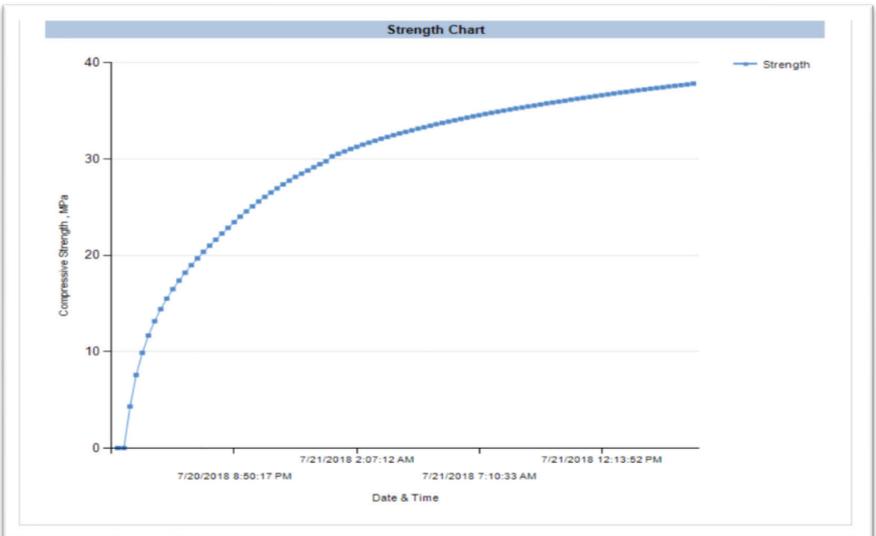
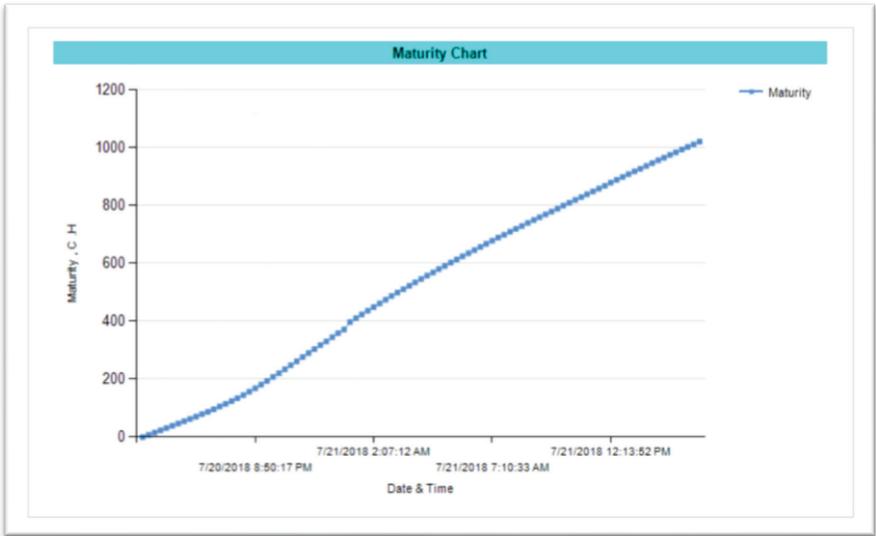
## View and Download Temperature, Maturity and Strength Data

Users can view and download real-time and stored data as follows:

- Select Concrete Projects and then Reports by Location
- Select Project, Structure, and Location associated with the device
- Data can be exported in Excel, Word or PDF by clicking

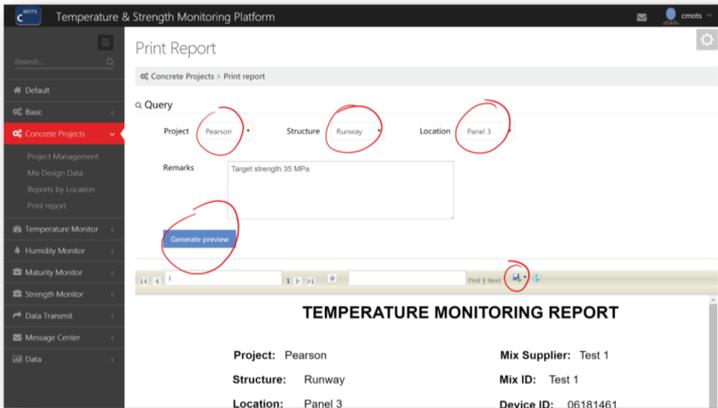


Temperature, Maturity, and Strength charts can be viewed on the last two pages of this report

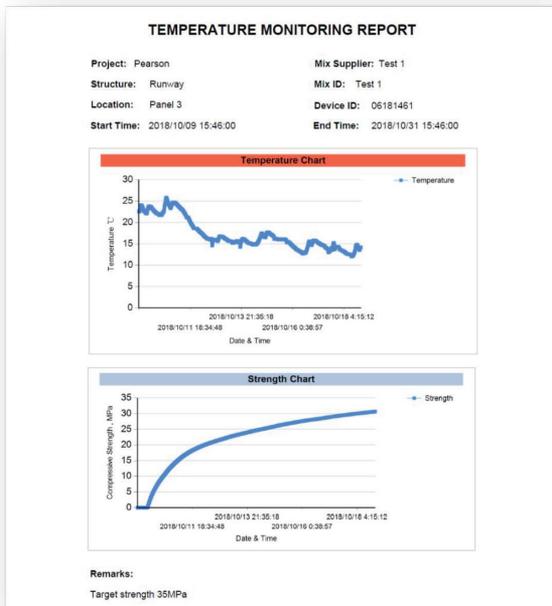


## Print Report

This feature allows C<sup>MOTS</sup> users to generate a report for each device location. Simply select Project, Structure and Location from drop-down menu and click Generate Preview.



This report can be downloaded in Excel, PDF and Word.

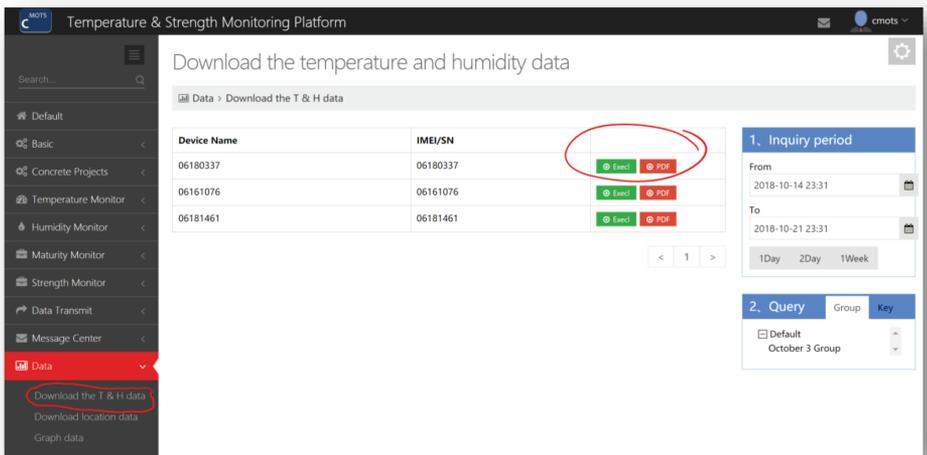


## Realtime Temperature Monitoring

- Select project Group from the top-right corner
- Click Temperature Monitor and then Realtime
  - Online loggers will appear green
  - Offline loggers will appear grey
- For historical temperature data, click Temperature Monitor and then History to access



To download temperature data, click Data and then Download T&H Data. If the device is capable of recording both temperature and humidity, both types of data will be displayed, otherwise only temperature.



ID	Device Name	Temperature	Humidity	Time (RTC)	Time (ServerTime)
1	T&H 1	26.0°C	59.00%	2018-08-20 22:34	2018-08-20 22:34
2	T&H 1	25.9°C	59.00%	2018-08-20 22:28	2018-08-20 22:30
3	T&H 1	25.9°C	59.00%	2018-08-20 22:23	2018-08-20 22:24
4	T&H 1	25.8°C	59.00%	2018-08-20 22:18	2018-08-20 22:20
5	T&H 1	25.8°C	59.00%	2018-08-20 22:08	2018-08-20 22:09
6	T&H 1	25.7°C	59.00%	2018-08-20 22:02	2018-08-20 22:03
7	T&H 1	25.7°C	58.00%	2018-08-20 21:57	2018-08-20 21:59
8	T&H 1	25.7°C	58.00%	2018-08-20 21:52	2018-08-20 21:52
9	T&H 1	25.8°C	58.00%	2018-08-20 21:47	2018-08-20 21:48
10	T&H 1	25.8°C	58.00%	2018-08-20 21:36	2018-08-20 21:38
11	T&H 1	25.8°C	58.00%	2018-08-20 21:26	2018-08-20 21:28
12	T&H 1	25.8°C	58.00%	2018-08-20 21:21	2018-08-20 21:21
13	T&H 1	25.9°C	58.00%	2018-08-20 21:16	2018-08-20 21:17
14	T&H 1	25.9°C	58.00%	2018-08-20 21:10	2018-08-20 21:11
15	T&H 1	25.9°C	58.00%	2018-08-20 21:05	2018-08-20 21:07
16	T&H 1	25.9°C	58.00%	2018-08-20 20:55	2018-08-20 20:56

## Realtime Maturity Monitoring

- Select project Group from the top-right corner
- Click Maturity Monitor and then Realtime
  - Online loggers will appear green
  - Offline loggers will appear grey
- For historical Maturity data, click Maturity Monitor and then History

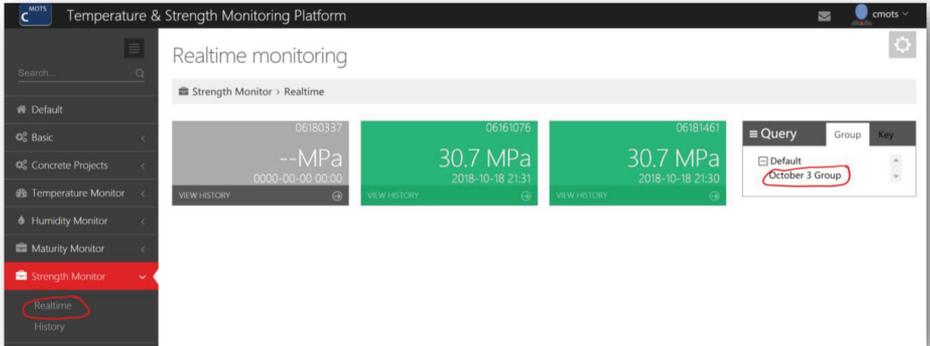
The screenshot shows the 'Temperature & Strength Monitoring Platform' interface. The main heading is 'Realtime monitoring'. Below it, there are three sensor cards:

- 06180337**: Offline (grey), showing  $-^{\circ}\text{C}\cdot\text{h}$  and a range of 0000-00-00 00:00.
- 06161076**: Online (green), showing  $3818^{\circ}\text{C}\cdot\text{h}$  and a range of 2018-10-18 21:31.
- 06181461**: Online (green), showing  $3794^{\circ}\text{C}\cdot\text{h}$  and a range of 2018-10-18 21:30.

On the right side, there is a 'Query' section with a dropdown menu showing 'Default' and 'October 3 Group' (circled in red). The left sidebar shows navigation options: Default, Basic, Concrete Projects, Temperature Monitor, Humidity Monitor, Maturity Monitor (selected), Realtime (circled in red), and History.

## Realtime Strength Monitoring

- Select project Group from the top-right corner
- Click Strength Monitor and then Realtime
  - Online loggers will appear green
  - Offline loggers will appear grey
- For historical Strength data, click Strength Monitor and then History







## Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

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