

# Mundane but Meaningful: Performance Data Upload Calculator

I'll keep it brief, calculators make our lives easier. Quick, what is the time weighted average of visitors in your retail store versus office space based on their distinct weekly operating hours? Don't bother getting out your pen and paper, the Performance Data Upload Calculator in Arc is ready for your most complicated calculations (most of the time), lets dive in.

## The Big Picture

In this article we'll cover some big picture items like

- How the calculator upload works
- Why you might receive an error message and what to do about it
- How to use the calculator
- How an effective date works and why it's important
- How does the visitor calculation work?

Another big picture takeaway is that completing the performance data upload calculator is now a required step to update occupancy, operating hours, and gross area. With the recent addition of features like "effective date" and "space exclusions" we're now requiring the calculator to ensure consistency across all building settings.

Let's also cover how data gets processed when you upload the calculator. From the platform's perspective, using the upload calculator is a four-step process.

1. Download the calculator
2. Complete the calculator
3. Upload the calculator
4. Receive a notification that data were accepted, and which (if any) had errors.

Let's spend a moment breaking down steps 3 and 4.

In step 3, the first thing we do is accept the calculator when you upload it, no matter what. Your calculator can be riddled with errors like overlapping dates (which we'll cover in more detail below), incorrect data, etc. we'll allow you to upload it.

In step 4, the next thing we do is scan it for errors and generate a report which is sent to your username email account. This report includes a description that some or all of your data could not be entered into the platform OR that all your data were successfully entered into the platform and no errors were detected.

## Receiving and Resolving an Error

Let's take a deeper look at what you can do if you receive an email indicating that an error message has been detected in your calculator upload. Avoid duplicate dates when uploading data using the calculator to an existing meter.

**The most common error is due to overlapping dates being detected. This typically occurs when overlapping dates exist between readings in the calculator and readings already in the platform.**

When an error like this occurs, an email is sent which contains an excel report highlighting the data entries within the meter causing the issue. Update the dates in the calculator so they no longer overlap and then re-upload the calculator.

READING START DATE	READING END DATE	READING (I)
Feb 13, 2018	Mar 13, 2018	38240
Jan 12, 2018	Feb 12, 2018	41840
Dec 13, 2017	Jan 11, 2018	37200

*Do not upload data that overlaps with the reading start/end date already in the platform. Reading start and end dates must be consecutive dates.*

If you are using the calculator to add energy or water consumption data to an existing meter, ensure that the meter name in the calculator matches the name of the existing meter exactly. Failing to do this will result in a separate meter being created. It's ok if you accidentally create a new meter, just delete it from the Details tab.

## Calculator Updates

### Instructions

We've made three changes to this section of the calculator. The instructions tab has been updated to offer a consolidated category view so you can select specific categories to work on, just select the appropriate check box(s) and you'll see a new tab appear on the bottom of the spreadsheet.

- The calculator may be used to create, format and upload multiple meter data (energy & water) and performance information to the platform.
- Ensure an effective date is selected for building settings such as gross area, occupancy, and operating hours (the calculator includes a default date of 1/1/2010). Subsequent uploads with new building setting information will replace previously entered values.
- We've also added a definitions section to help clarify common terminology questions.

Lastly, before uploading the calculator, verify it does not contain duplicate information such as overlapping dates with existing meters and readings already in the platform.

Overlapping dates will result in an error message and the calculator will not upload until the conflicting dates have been resolved.

## Building Settings

The building settings section has gotten an overhaul, we've made three changes to this section of the calculator.

1. Visitor calculation
2. Space exclusions
3. Effective date

Let's break each of these down one by one.

### Visitor Calculation

The visitor calculation now takes into account "Days per week with visitors". This update results in a more refined total visitor count. The original equation as outlined in the LEED v4.1 beta guide is,

#### Original visitor calculation:

$$\text{Daily Average Visitors} = \sum \left[ \frac{\text{number of visitors per day} * 7 \text{ days}}{\text{operating hours per week}} \right] * \text{duration of visit}$$

#### Updated visitor calculation:

$$\text{Daily Average Visitors} = \sum \left[ \frac{\text{number of visitors per day} * \text{days per week with visitors}}{\text{operating hours per week}} \right] * \text{duration of visit}$$

In the original visitor calculation we assumed visitors were coming to space/building 7 days per week. In this update we're now applying the calculation to the reported number of days visitors are coming to the building/space.

### Space Exclusions

The LEED v4.1 beta rating system includes the ability to claim an area exclusion for tenant spaces up to 10% of the project total gross floor area within each category. To support this program the calculator now offers a category specific exclusion matrix. This matrix allows you to exclude a space from one or more categories.

To exclude a space from the calculation, include the same information as spaces which are included. Then select "exclude" from the inclusion/exclusion matrix. Verify that this gross area isn't more than 10% of the total area. The calculator will automatically adjust the summary metrics for floor area, occupancy and operating hours below the calculator table.

These individual summary metrics become the basis for that individual category score. For example, a 500,000 sf mixed use office building operating 60 hours/week contains 37,000 sf of separately metered ground floor retail space operating 80 hours/week. Typically the office portion of the building would have around 700 FTE/week while the retail space has 50 FTE and 250 visitors/day averaging a .5 hour duration of stay. Without exclusions, the total weighted summary metrics are

- Gross Area – 500,000
- Operating Hours – 61
- Total Building Occupants - 759

These metrics would then be used to calculate ALL category scores.

*This updated calculation represents a substantial shift in how category scores are calculated as each category is now able to have its own unique set of occupancy, operating hours, and gross area metrics.*

Let's look at this same example but with the 37,000 sf of retail space excluded.

The project team includes all the summary building settings info for the base building and retail spaces including visitor count and FTE just as before. They select "exclude" for all categories from the exclusion matrix rather than the default value "include". Lastly they click the, "Refresh Summaries" button under "Adjusted Values for Category Scoring".

The new summary values which will be applied **at the specific category level** are

- Gross Area – 463,000
- Operating Hours – 60
- Total Building Occupants - 750

In a more complex example, it may be the case that the water category has different metrics than the waste category. This flexibility mimics the complexity of real world projects and addresses the challenges you may face in your data collection efforts.

### Effective Date

To fully understand why we've added an "effective date" let's start with a brief refresher on how the performance score works. You provide consumption data in five categories, energy, water, waste, transportation, and human experience. The performance score is based on a rolling average of the last 365 days of data. This means that when a score is selected from a single day (for example as the reporting period end date in a certification OR to check a historic score) it represents the prior consecutive 365 days' worth of data. The score is based on the consumption data and three key metrics

- Gross area
- Operating hours
- Occupancy

These metrics give us normalized values like gallons/occupant, carbon/sf, and lbs/person/day. The scoring metrics for your project can be reviewed under the total analytics section in Arc. Prior to this change, the date one of these values was updated in Arc was the date it was applied to the score. But what if the date these values applied was in the past? For instance a tenant moved in or out, an addition was completed, or hours of operation change seasonally. The new effective date feature

resolves these issues and allows you to more accurately characterize when changes to building settings are reflected in the score, giving you complete control. Let's take a closer look at how it works.

The effective date you select is assigned to the building settings which in turn impacts the performance data and ultimately the category and total scores. Remember, the score is based on a 365 day rolling average, so **today's scores will reference the most current calendar date uploaded**. However, historic scores will reference a prior preceding effective date. To better understand this let's look at a concrete example.

An effective date of 1/1/2019 has been entered, a subsequent effective date of 4/15/2019 was then entered. Data being scored on 4/16/2019 will reference building setting information based on the 4/15/2019 effective date. However, a reporting period end date selection of 2/1/2019 would reference historic scores based on the building settings on the 1/1/2019 effective date.

### Big Picture Reprised

We're excited about the increased functionality and features in this updated calculator. With these updates you get better alignment with LEED v4.1, increased flexibility, and more refinement in scoring.

If you have questions about changes to the calculator contact us [contact@arcskoru.com](mailto:contact@arcskoru.com). If you have questions about LEED or v4.1 contact us [leedv4.1@usgbc.org](mailto:leedv4.1@usgbc.org)