



Michaels Engineering LEED® Brief

MEASUREMENT & VERIFICATION



SUGGESTIONS...

Do you have certain LEED® topics you'd like to know more about? Send an email with your suggestion to the author listed below and your topic might become a future LEED® Brief!

DID YOU KNOW...

...Measurement and verification is a tool that can be used to keep your building operating correctly throughout its useful life.

...M&V can also help you understand how your facility uses energy and how to use energy more efficiently.

MEET THE AUTHOR



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→ MEASUREMENT & VERIFICATION

Imagine trying to determine the fuel mileage of your vehicle if you didn't have an odometer. Did you go to the store two times or three this tank? How far exactly is it to work? You paid for a fuel-efficient vehicle, but are you getting your money's worth, or did you buy a hybrid and get the mileage of an SUV? You know what you are putting in, but what are you getting out?

A new building is much like that vehicle. You invested your time and capital into designing and constructing a facility, and you have had building simulations run to let you know how much energy or resources your building is going to cost you. But now your building is in operation and you begin to question, "How much did we really save?" or "Why do our utility bills not match what we predicted?"

Were your expectations unreasonable, or is your building not operating in a manner consistent with the original analysis?

Determining the cause of the differences is not easy. Many factors affect energy or resource usage. These can include: weather, occupant patterns, ventilation rates, indoor air temperatures, production rates, and many others. Without adjusting for all relevant factors, your savings level is in question.

Measurement and verification (M&V) allows you to break down the facility into manageable pieces to adjust for the various relevant factors to determine if and where discrepancies occurred. Each individual system or piece of equipment can be verified against the original energy use model. Examining the data may reveal opportunities to adjust equipment operation to optimize or minimize resource usage.

→ M&V FOR LEED® CREDIT

Unlike many of the other LEED® credits, measurement and verification does not involve installing any equipment or features that save energy or resources. In many cases, if a building is operating as intended, no additional savings may be realized. However, measurement and verification has significant potential for benefit.

LEED® commissioning is a tool to ensure your building is functioning correctly at the start of usage. From there, it is up to you to keep it operating efficiently through active involvement with the energy management system and occupant behavior that is conducive to meeting energy saving goals. Measurement and verification is a tool that can be used to keep your building operating correctly throughout its useful life.

→ CONCLUSIONS

Measurement and verification is a powerful tool that can be used to maximize savings and efficiency potentials, determine areas where a building is not behaving like models predicted, and ensure persistence of savings. It will also help you and your facilities management team better understand how the facility uses energy, and how to use energy more efficiently.

