



M&V COORDINATION BETWEEN UMA AND PROJECT TEAMS:

- UMA will be responsible for monthly data collection & transfer to the M&V Agent (MVA) during the pre-defined M&V collection period. Stewardship of this data is the responsibility of the UMA Green Building Committee. <http://www.umass.edu/sustainability/get-involved/green-building-subcommittee>
- The MVA is a separate entity hired by the project team, not necessarily affixed as a sub to the design or construction team, but nevertheless funded by the project. The MVA is responsible for:
 - Developing the official M&V Plan for the project
 - Managing and/or performing a **pre-M&V period** calibration of the proposed case energy model, incorporating air/water balance results and any equipment substitutions, etc., due to construction, that change the performance ratings of the systems vs. as designed scenarios.
 - Analyzing monthly data received from UMA, including full access to the Campus BAS (JCI Metasys) as needed
 - Documenting any system operating adjustments made during the M&V period (typically as a result of suggestions by the CxA during their post-occupancy period analysis or by continuous O&M adjustments by UMA Physical Plant staff)
 - Generating an M&V Report at the end of collection period, with recommendations for further adjustments to optimize the building systems
- Adjustments to the energy model will also most likely be handled as a separate entity hired by the project team. This could be the original energy modeler, the MVA, or a 3rd party entity. Regardless, this would also be funded by the project. Typically, this would not be the mechanical designer or the mechanical contractor due to their biases.
 - Ideally, the energy modeler that did the original model would make the pre- and post-M&V adjustments.
 - However in case this is not possible, UMA would request that the energy modeler that did the original model share their working files with UMA or hired 3rd party, so that pre- and post-adjustments to the model could be made.
 - **At a bare minimum, UMA expects that the energy modeling parameters/Basis of Design be submitted** for pre- and post-M&V adjustments to the model, so that UMA or the hired 3rd party can replicate the model via separate resources.
- It should be noted that though the roles of the MVA and the Cx Agent (CxA) are similar (and therefore could be combined), they are not necessarily the same:
 - In addition to standard end-of-construction Cx, the CxA may be hired for post-occupancy Cx services in the form of continuous commissioning (CCx), a 6-mo/10-mo/12-month evaluation (or any combination thereof) ...up to a 2 year typical commitment. This post-occupancy Cx service is not required, but is optional as project funds, LEED points, and overall value are assessed.



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- The MVA typically is identified prior to CD phase of the project, reviews the bid docs for necessary hardware needed to successfully complete M&V, and is a more-or-less passive observer of building consumption during the M&V period. It is not a role of the MVA to suggest and make recommended adjustments to the building systems during the M&V collection period.
 - Since the MVA and firm that does the energy model adjustments are committed to the entire M&V period (usually 1.5 to 2 years), this arrangement (i.e. as separate entities, not affixed as a sub to the design or construction teams) seems to be the least conflicting way to keep the design/construction process take its natural course, and not have open-ended project accounts for many months post-occupancy.

Any questions or comments should be directed to Ted Mendoza, GBC Chair, at tmendoza@facil.umass.edu or (413) 545-6564.