

KAIZEN



COPPERTREE
ANALYTICS
Realize building potential

A seamless solution putting you **IN CHARGE**



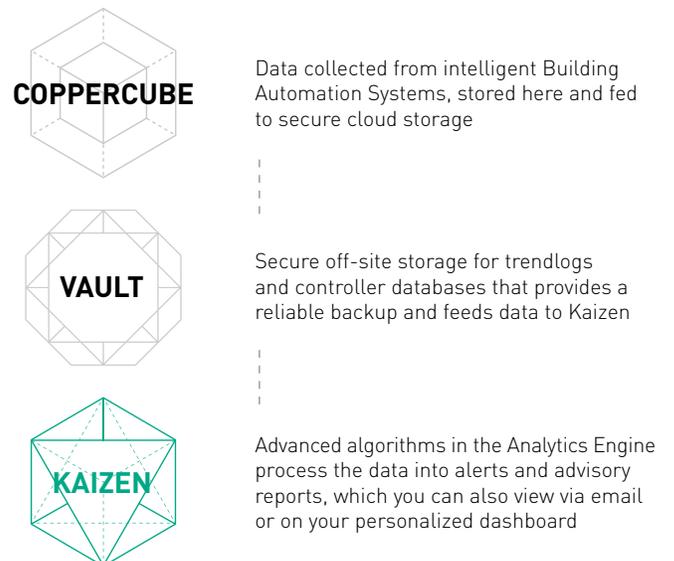
CopperTree Analytics provides energy management and Fault Detection and Diagnostics as software as a service, giving you the power to optimize your building's performance and continuously improve it.

ACQUIRE • ANALYZE • ADVISE

Our three step method provides a seamless solution to put you in full charge of the efficiency of your building, allowing you to save money, lessen environmental impact and improve tenant satisfaction.

With CopperTree, you get real-time insight and we have established a network of expert Building Automation System (BAS) integrators who can help you act on CopperTree insights to make sure your building is working perfectly.

THE COPPERTREE SYSTEM



MEET KAIZEN

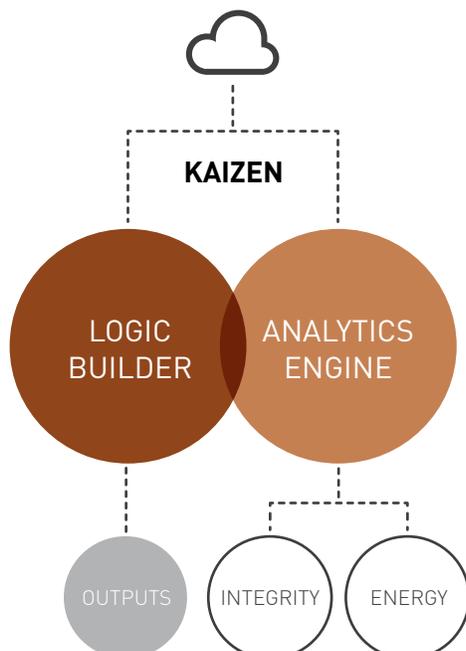


CopperTree Kaizen is the **'brains'** of the system, taking your building's output data, stored in our secure Vault cloud facility and analyzing it, to provide a full picture of energy use and efficiency.

As the Vault is continuously updating the raw data, Kaizen can immediately pinpoint inefficiencies or anomalies, providing you with actionable insights to make improvements.

Think of Kaizen as your **Virtual Building Manager**; at your service 24/7, wherever you are. We called it Kaizen because of the theory of continuous improvement developed in Japan where Kai means 'good' and Zen 'Change'. CopperTree helps you identify and make the 'good changes' your building needs to continuously evolve its performance.

Kaizen comprises two key elements: the Analytics Engine and the Logic Builder. Combined, they provide a powerful tool to help you understand and manage your building more effectively than ever before.



01 LOGIC BUILDER

Logic builder enables building managers to constantly revise analysis evolving the building performance metrics, as optimization improves efficiency.

Customized to your building according to your building's parameters and desired reports. The insight can be delivered in a number of ways you choose, e.g. charts, alerts, reports and KPIs.

02 ANALYTICS ENGINE

Organizes and analyzes data using algorithms created by industry experts. **Energy** and **Integrity** tools to track usage and performance.

Integrity

Constantly monitor your building system to identify faults and diagnose issues using CopperTree's FDD tool (Fault Detection and Diagnostics).

Golden Standard: create a benchmark to maintain and improve performance – specific to your building.

Energy

- Know more detail on usage
- Track, Report and Meter just about anything without installing expensive metering equipment
- Customizable dashboard
- Convincing and clear reporting

LOGIC BUILDER



CopperTree Kaizen gives you maximum flexibility to utilize any number of data inputs from your building and make sense out of them. Realizing every building is different, our logic builder is both versatile to ease the implementation, and powerful to meet your unique requirements.



VERSATILE

The same logic built to produce an insight alert can be used to create charts and reports. This flexibility allows you to import a logic template from the community library, modify it to meet your requirements and begin receiving insight alerts, viewing charts and sending out reports. However, the choice is yours if you want to begin building your logic from scratch.



POWERFUL

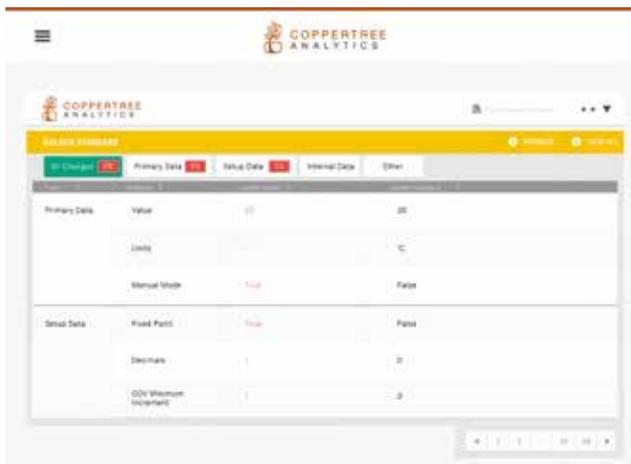
From simple unit conversion to data normalization and aggregation and all the way to more complex mathematical calculations, our logic builder is equipped with a variety of logic blocks to keep you busy. Busy not trying to figure out 'how' to implement your ideas but rather 'what' else you can do with it.

GOLDEN STANDARD

CopperTree Kaizen lets you benchmark your building's performance, setting your own Golden Standard for energy efficiency and building operation. The Golden Standard is automatically set within Kaizen and can be adjusted gradually as systems are improved.

The Golden Standard acts as a digital blueprint of your building. While fixed as a 'factory setting' at install, it resets as performance improves. It immediately identifies if and why performance has changed, allowing you to implement adjustments to set a new Golden Standard. Make the 'good changes'.

Continuous monitoring and reporting means you can demonstrate improved performance and keep control of costs.



ANALYTICS ENGINE



To gain **full advantage** of CopperTree Kaizen, you may choose both the Energy and Integrity options, or just one of these. Energy helps you understand and manage your building's energy consumption and will give you invaluable guidance on how to use the data effectively.

ENERGY

Track and report

Kaizen's Energy option means you can track energy consumption and efficiency throughout your building, through on-site meters. Advanced meters cover all key 'traditional' utilities such as water, gas and electricity, plus renewables such as solar and wind energy.

The system also allows for customization to meter supplementary items, like back up diesel generators or fume hoods in laboratories. In addition, Kaizen gives you the advantage of 'virtual metering' that uses the physical points already available within your Building Automation System. By leveraging the data already available, you can gain valuable insight into the specific energy usage for any piece of equipment without the expense of a physical electrical meter.

Dashboards

The Kaizen dashboard shows you itemized consumption, by meter, system or building, giving you the fullest possible energy picture.

You choose your preferred time profiles, so you can monitor on-going usage or compare it to past trends and baselines, showing how current performance measures up.

You can also drill down to the level of detail you require; from a report on one specific zone or building, to a rolled up view of a site or area of buildings covered by the system.

INTEGRITY

Fault Detection and Diagnostics (FDD)

FDD provides a simple way for you to 'see' inside your system, via an intuitive user interface, giving you a number of benefits:

Continuous monitoring, reducing unnecessary scheduled maintenance.

- Longer systems life, avoiding unnecessary replacements and breakdowns
- Alerts sent as needed. You choose where these alerts go, so staff can receive them while off-site, if required
- Staff spend less time troubleshooting and more time fixing, so more problems are solved with the same resources
- Diagnostic system helps pinpoint problem areas quickly and easily.

Over time, you save money by controlling staff and maintenance costs. The system is flexible and evolves with your needs, so you will not need to replace it as your building changes.

USER FRIENDLY INTERFACE



The CopperTree Kaizen interface is designed for maximum flexibility, meaning you can choose what you see and who in your organization is allowed to see it. The role configuration feature gives you built-in security to ensure no unauthorized persons gain access.

The Kaizen interface is designed for maximum flexibility, meaning you can choose what you see and who in your organization is allowed to see it.

The role configuration feature gives you built-in security to ensure no unauthorized persons gain access.

You can customize your dashboard so that information is displayed as you wish to see it. You can also access the dashboard from wherever you are, making it easy to get information whenever you want it.

Kaizen gives you all the data you need and outputs it in a variety of ways, so you can make informed decisions or next actions.



CHARTS A chart is simply a graphical representation of a trend. Charts are used on their own as an aid to troubleshooting or performance monitoring, or can be included in reports or dashboards.



REPORTS A report is an electronic document that is sent to a user or group of users on a periodic (monthly, weekly, etc.) basis. Reports can include charts, KPIs and other data.

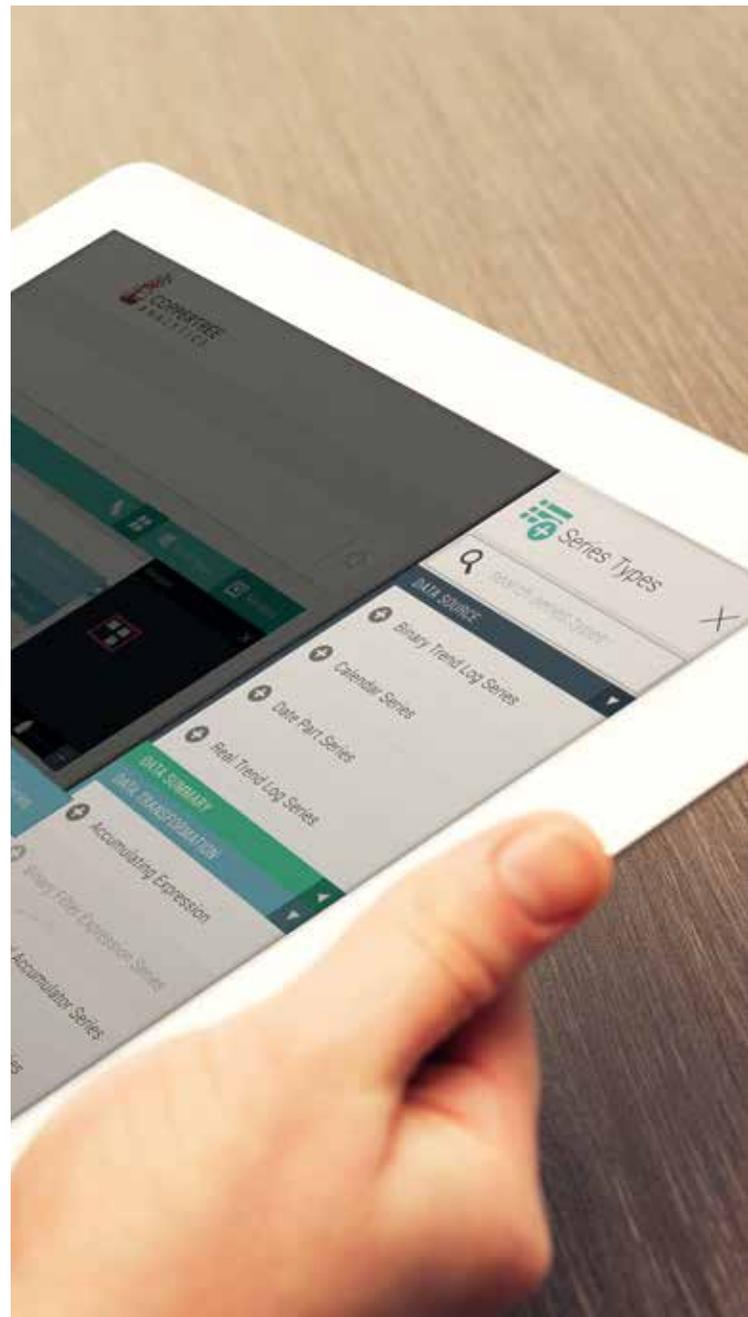


KPIs Key Performance Indicator, a data point that can be tracked and reported on, that gives (typically) management an idea of how a particular activity is tracking to expectations. Often set against industry benchmarks. An example would be overall building energy consumption.



ALERTS Alerts are immediate advisories of an event within the system. Alerts can be sent to a user or group of users to advise when a system or metric falls out of standard. It can be sent via email or to smart mobile devices.

All of your data is safely stored in Vault, our secure cloud facility, giving you peace of mind in the event of a disaster recovery situation.



HOW COPPERTREE HELPS



CopperTree helps our current clients with a wide range of energy and building management issues. The following examples show how we can deal with even the most specific of problems.

THE CHALLENGE:

A laboratory needed to report on waste water discharge pH and volume for city permits. Compiling this data would be difficult and time consuming manually, because of the level of detail required including:

- PH level of discharge (to show compliance to authorized range)
- Total and daily discharge volumes
- Maximum daily discharge rate

THE SOLUTION:

The automated reports generated by Kaizen were customized to contain exactly the information that the city requested, generated directly from the trendlog data, so they require no manual resource time. The reports build a detailed picture of the discharge and can be drilled down into by time, or thresholds making them much easier to monitor and provide authoritative documented evidence.

THE BENEFIT:

Kaizen's reports are 100% accurate based on the data feeds, and because they are automated they are immediate, saving the time and money the manual reporting used to take. The reports are easy to interpret and provide a fast and easy way to review the key data over a wide range of time frames. CopperTree has made continuous monitoring of this essential treatment system (and adjustment actions if required) much simpler to ensure safety compliance; an essential aspect of the company's risk management taken care of!

THE CHALLENGE:

A large hospital has a helicopter pad on one of its rooftops and, although there isn't a lot of snow in the winter, it is equipped with a snow melting system controlled by a sophisticated snow detector: required as part of the hospital's emergency preparedness plans.

THE SOLUTION:

One of the annual maintenance tasks is to verify the operation of this system prior to the winter season. The procedure for checking the heating elements is to manually enable them through the BAS system graphics. This is a perfect end-to-end test to make sure the equipment will be enabled by the BAS when the snow detector calls for it. It's perfect... until the crew forgets to put the control point back to automatic.

THE BENEFIT:

With Kaizen Integrity, maintenance procedures to override the control of the HVAC equipment are monitored to ensure the system is always operating in automatic mode. When a control point is manually overridden, an insight is generated and sent to Operations as an alert, prompting operators to either put the point back to automatic. CopperTree ensures the HeliPad is ready to go on those rare icy days; because in this situation it really could mean life or death.



At CopperTree, we have 30 years of practical energy and building management expertise behind us, allowing us to bring you a SaaS solution to help you start saving energy now. Our passion is to empower you to take charge, by giving you the right tools to optimize building performance.

With CopperTree, you get more than just data presented back to you: our system takes real time data and adds insight about the impact of variables, unique to your building. This means you take back control of managing your resources – people, time and money – as you have the information you need to schedule the important and deal with the urgent, in the most efficient manner.

We understand that energy and building management is not about static measures, but about how systems develop. With CopperTree, you get all the information you need in one single platform, so you can be proactive in managing your building.

To find out what CopperTree can do for your building, visit our website at www.coppertreeanalytics.com.

Or contact your local distributor now:



COPPERTREE
ANALYTICS
Realize building potential

www.coppertreeanalytics.com
+1.855.575.5943