



# Energy Manager™ – for Buildings

## 43% Annual Savings

For Hotel, Multifamily, University/School, Nursing/Hospital, Government, Cruise

[www.Team-TMG.com](http://www.Team-TMG.com)

*Stop paying for wasted energy – enhance guest comfort WHILE cutting your costs by 43%.*

Call for Free Evaluation:

310.582.5388

[sales@team-tmg.com](mailto:sales@team-tmg.com)

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### WHAT WE DO:

Energy Manager networks your building HVAC units together, to provide first-class comfort heating/cooling while saving you 43% every year.

Our goal is your goal: to convert energy-saving opportunities into cash.

Our focus is managing the HVAC units in your guestrooms/apartments, but Energy Manager expands to control your entire building: Rooftop HVAC, lighting, common areas, even restaurant coolers and pools. Without wires.

### WHO CAN BENEFIT:

Hotels, Apartment Buildings, Universities/Schools, Nursing/Hospitals, Government/Military, Industrial, Cruise Lines

## Recent Projects

SOHO GRAND HOTEL, NEW YORK CITY

318 GUESTROOMS



PARAMOUNT HOTEL, NEW YORK CITY	580 GUESTROOMS
DOWNTOWN HYATT, TORONTO	575 GUESTROOMS
ARLINGTON HYATT, VIRGINIA	320 GUESTROOMS
FOUR POINTS SHERATON, TORONTO	350 GUESTROOMS
CROWNE PLAZA, BOSTON/NATICK	120 GUESTROOMS
SPRING HILL SUITES, FLORENCE, KY	108 GUESTROOMS
COURTYARD MARRIOTT, SYRACUSE & RYE, NY	220 GUESTROOMS
MAGELLAN AEROSPACE, MIDDLETON, OHIO	250,000 S.F. INDUSTRIAL FACILITY

## Does Your Building Have....

If you have any of these systems, we can reduce your energy cost by approximately 43%:

- **PTAC (Packaged Terminal Air Conditioner).** You'll notice these units in Hotel guestrooms and university dorms. PTACS are built into the wall, and provide heating/cooling for each room. They have push-button HI/MED/LO controls, or sometimes a red/blue dial for hot/cold.
- **FAN COIL UNITS.** Common in older buildings, Fan Coil Units are built-in "boxes" that blow air over hot/cold water pipes to heat/cool each room. They're like radiators, plus fans.
- **BASEBOARD ELECTRIC HEAT.** Metal strips that provide heat.
- **ROOFTOP HVAC.** Those large "boxes" on rooftops that provide heat and air conditioning.



In addition to our Energy Manager system, we also offer brand new HVAC units. And since Energy Manager is wireless, it doesn't matter if your building is under construction or 90 years old. Installation is quick and clean.

## Keep Your Money

**TEMPERATURE SWINGS COST YOU MONEY.** Without our system, your apartment/guestroom HVAC units over-heat and over-cool your rooms, costing you a stack of money every year. How? The crude thermostats built into most in-room HVAC units allow fluctuations of 4-10°F (or more) from the desired temperature (see independent research section). That extra heating/cooling is wasted money.

But after we add our wireless digital thermostats, guests can regulate their room temperature more precisely, and with zero effort (set and forget). Guests stop "fighting" to maintain the desired temperature. This enhances guest comfort by eliminating temperature swings (caused by those crude built-in controls and thermostats), resulting in happier guests and less energy waste. Over-heating/cooling wastes expensive energy, costing you a great deal of money. We eliminate that.

**HEATING/COOLING EMPTY ROOMS COSTS YOU EVEN MORE.** Plus, when occupants leave their rooms, they typically leave their HVAC unit running, to heat/cool their empty room all day. This costs you even more money. Our system saves that money by sensing when guests are in their rooms – after they exit, our wireless system cuts HVAC energy use, allowing the temperature to drift the number of degrees that you program ("setback") until they return. Saving you money.

Then later, when the guest checks out (Hotels), or is gone a certain length of time (Apartments/Dorms), our system cuts that room's energy use even more, for extreme savings. Over the course of a year, these automatic cutbacks save you a great deal of money. Stop paying to heat/cool empty rooms. Keep that money in your pocket.

**AND COMPLAINTS COST YOU.** Energy Manager software also monitors your rooms for equipment/temperature problems, so they're corrected *before* guests complain – this means fewer givebacks and lower engineering payroll. That's additional money you keep.

All while reducing your energy cost by an estimated 43% every year.



## Benefits

- Reduce Energy Cost by Up To 43%
- CENTRALIZED Real-Time temperature control for Occupied/Sold/Unsold rooms (stop wasting money)
- Steady temperature: make guests comfortable AND save money (no costly temperature swings)
- Convenient: set-and-forget digital thermostat controls single or multiple PTACS (rooms and suites)
- Software lets you Monitor/Control guestrooms from Front Desk (see SOFTWARE below)

**WHAT ELSE DOES OUR SYSTEM DO?** Our wireless system is **EXPANDABLE** to monitor/control everything in your building – meeting rooms, lighting, even restaurant coolers and pools. It works with PTACS and other types of HVAC equipment, even older systems – please inquire. It's **CENTRALIZED**, so you control the entire building from any computer, anywhere. Our **DATABASE** records your data, so you can compare periods, chart progress and set goals to save more money.

Plus, it's **WIRELESS**, so there's no drilling concrete walls, no expensive ugly cables, no disturbance to guests. Installation is quick and clean. Guests see only an elegant, state-of-the-art digital thermostat conveniently located on their wall. And our monitoring software alerts you to issues, via e-mail or text message. So those issues are corrected promptly, before guests complain and demand givebacks.

**GOVERNMENT INCENTIVES.** Another rapidly growing benefit is government incentives for green buildings. In many cases, Energy Manager helps you earn government Tax Breaks/Credits, Low Interest Loans, Fee Waivers, Expedited Permitting, Fast Tracking, and Grants.

You could also obtain a Density Bonus (increased FAR) which allows you to build more square feet than your zoning limit. Organizations such as LEED offer certification that may qualify you for such incentives.

In most cases, Energy Manager helps you qualify as a green building.

## More Benefits

- LEED Green Building Certification / Government Incentives:** Get government incentives
- No Wiring:** Clean installation for concrete walls / Guests aren't disturbed by install / Lower cost
- Expandable:** Manage/control common areas, meeting rooms, lighting, rooftop HVAC, pool, coolers
- Lower Engineering Payroll:** Predict & fix problems, without routine engineer checking
- Fewer Givebacks**
- Higher Rent or Nightly Rates:** Enhance guest comfort and charge more
- Longer PTAC life:** Cuts your equipment cost
- Alerts via e-mail/SMS:** Software alerts you to room issues immediately, before guests complain
- Reliable:** Wireless self-healing mesh network; RF frequency talks to all nearby rooms
- Plug-And-Play:** Quick install, start saving immediately



To save you even more money, our proprietary Energy Manager software manages the system:

## Software - Front Desk & Remote

- WE monitor your building from our server. YOU configure/monitor guestrooms from Front Desk
- Remote Monitoring: Use any computer with internet to control your system remotely
- Our software links with your existing Front Desk software to automatically manage rooms
- Sold but empty rooms automatically go to "setback" temperature until guest returns (system senses when guests are in their rooms)
- Unsold rooms automatically go to "deep setback" temperature (chosen by you, reducing costs further)
- Ready Rooms: Automatically keep several unsold rooms at "ready temperature" for new check-ins
- Full Scheduling: If Conference Room B has a meeting at 8AM, schedule it to pre-heat at 7:30AM
- Predictive Analysis: 5-day weather/occupancy forecasts predict your Peak Demand, so you can adjust

**SOFTWARE.** Our software creates a network, which is the most vital part of our system – allowing you to manage/control your entire building. Energy Manager software is configurable to monitor/control guestrooms individually or in groups. From any computer, anywhere. Without guessing your usage, without going room-to-room every time you need to make adjustments.

Expecting a slow week? With one click, adjust an entire floor's setback temperature to save more – no need for engineers to visit the rooms. Is your Peak Demand getting too high? Log in from home. Set thresholds that automatically trigger reductions – limiting your energy bill.

As a tour group checks out, want to cut energy use in their empty rooms? No need to do anything, because that's done automatically the moment your front desk checks them out – our software links with your existing front desk software, so it always knows which rooms are unoccupied, sold, or unsold. For each room status, Energy Manager applies the degree of energy savings you choose.

Energy Manager also includes FULL SCHEDULING. Conference Room B has a meeting at 8AM? Schedule it to pre-heat at 7:30AM so it's ready for the meeting. Also, PREDICTIVE ANALYSIS uses 5-day weather/occupancy forecasts to predict your Peak Demand, so you have time to plan and adjust.

**WHY IS THE BUILDING NETWORK VITAL?** Because WITHOUT our software-driven network, you can't schedule heating/cooling; can't forecast use; can't limit peak usage; can't link with hotel/hospital front desk software to stop heating/cooling unsold rooms; can't reduce Expected Demand; can't benefit from a database; can't find where to save energy; can't get paid by Demand Response programs; can't discover problems until guests complain; and can't adjust anything without walking room to room every time.

Energy Manager also saves you money beyond the expected 43% every year, as follows:



## Energy Manager: More Ways to Save

- **Reduce Peak Demand:** Electricity is more expensive during peak hours
- **Limit Expected Demand:** Utility companies bill you based on your Expected (highest so far) Demand, since they're required to keep that much electricity "on tap" in case you need it. So by predicting/limiting your high-use periods, you reduce your Expected Demand, saving not only on those periods, but also on future billing periods
- **Demand Response Programs (extra savings):** Since utility companies are often overloaded, third-party programs will pay you to occasionally cut your demand for a matter of hours. These payments are substantial, but you cannot get them without a system that reduces your real-time energy use upon demand. Our system does exactly that - enabling you to receive substantial extra payments from these third-party programs. That's additional money you can earn.

**EXTRA SAVINGS.** Your extra savings on givebacks, engineering, and longer PTAC life can easily raise your total savings to 45% or more. Plus, if you decide to enroll in third-party Demand Response Programs (and get paid for the occasional usage cutback) your savings go even higher.

## Your Savings

Before our system is installed, TMG estimates your current electricity usage at \$990/year for each in-room HVAC unit (published national average). After installation, Energy Manager reduces this energy use by 43% per year (estimated), saving you money as follows:

Previous Annual Operating Cost per PTAC (Approx):	\$1,040
<i>Based on national average of \$990/unit energy usage</i>	
<i>Includes \$15 cleaning &amp; \$35 repair per unit</i>	
43% Annual Savings per PTAC Unit (Estimated):	-\$426
<i>Energy Manager saves you 43% of current energy cost</i>	
<b>Final Operating Cost per PTAC (Estimated):</b>	<b>\$614</b>
<i>Includes \$15 cleaning &amp; \$35 repair per unit</i>	

Energy Manager reduces your energy usage by 43%, and this Annual Energy Savings = \$426/year per HVAC unit (based on national average). But with higher-than-average energy pricing (as in Tri-State Area), your savings can be significantly greater. How does \$426/year savings per unit apply to your building? Some annual examples, assuming each room has only 1 HVAC unit:

ANNUAL SAVINGS PER:		
100 Rooms	500 Rooms	1,000 Rooms
\$42,600	\$213,000	\$426,000
<i>Assumes only 1 PTAC per room; savings based upon national average</i>		



That money stays in your pocket. If larger apartments/suites have more than 1 HVAC unit, just multiply your building's number of HVAC units by \$426 to see how much you'll save every year. To cut costs so deeply, Energy Manager includes:

## System Hardware



We install Energy Manager WITH OR WITHOUT our new PTAC heating/cooling units. And we install in buildings under construction; or buildings that are 100 years old. Installation is wireless – quick and clean.

### INCLUDED EQUIPMENT

- Wireless Wall Thermostats, Wireless Control Nodes (1 per PTAC), Occupancy Sensors, Door Switches
- Installation of above; plus Computer (at front desk) to monitor/control system

### OPTIONAL

- NEW PTACS: Replace 20% of existing HVAC units each year with new PTACS (60 month plan)
- Installation of PTACS
- PTAC Cleaning Service

### INCLUDED FEES

- Annual Software Licensing Fee
- Monitoring Fee

Our system communicates by wireless RF (radio frequency), instead of the quirky and unreliable infrared. Those infrared products, similar to your TV remote control, have 2 major flaws: infrared needs line-of-sight from the wall thermostat to the HVAC unit (often blocked by curtains or furniture); and infrared cannot communicate room-to-room, so monitoring infrared units requires costly/ugly wiring to cable all rooms to your office. This is why our system uses wireless RF instead – it provides reliable data transfer, and links your buildings together without cables.

Inside each room, we add a “controller node” to the HVAC unit. Our wall thermostat controls that “node” by WIRELESS RF signals – switching your HVAC unit on/off without wires.

**RELIABLE.** Our system creates a “self-healing” building network – it’s wireless, so every room can see the



rooms around it. If there's an issue in one room, the other rooms "go around it" and still communicate with the network while the issue is resolved.

## (ONE PROGRAM) Summary

To make our system more affordable, we've designed a package called (ONE PROGRAM).

(ONE PROGRAM) is designed so that your *energy savings* will pay for your investment. By financing your project using your energy savings, you largely avoid out-of-pocket payments. Please inquire.

### (ONE PROGRAM) with OPTIONAL PTAC ROLLOUT

An optional component of (ONE PROGRAM) is the rollout of new PTAC heating/cooling units to all guestrooms over several years. During this time, a PTAC Cleaning program is included, to extend the life of your PTACS, and to maximize their efficiency. This new-PTAC Rollout Feature is optional – our Energy Manager system works with any PTACS, whether they are yours (legacy) or provided by us (new).

To reduce your energy cost by \$426 per PTAC annually, we install our wireless control/monitoring equipment; replace your existing HVAC units with new PTACS (over several years; this feature is optional); enable you to manage your building via Energy Manager software; and clean your PTACs for enhanced efficiency and extended life.

Combined, these elements drastically reduce your energy cost for every guestroom, every year, WHILE increasing guest comfort and reducing complaints. That's money you keep.

(ONE PROGRAM) also includes ongoing analysis by our real-time monitoring facility, TMCC, which monitors your energy usage to maximize your return on investment. Are particular rooms burning a great deal of energy? Our software identifies anomalies so you can resolve them – and save more.

## Best Investment

Why is there no better investment you can make than centralized control of your energy use? Because Energy Manager (*without* new PTACS included) pays itself off in about 15 months. That's 100% ROI in 15 months, and it's paid off. Every month after that, every dollar you save goes directly into your pocket and stays there. You keep all the money you save, every month, forever.

The only place such robust returns *were* available was extremely risky/volatile financial instruments such as options and derivatives. But hotel owners don't need to gamble with those unsafe

Energy Manager – enhance guest comfort while cutting costs: **310.582.5388**



investments. Hotel owners are perfectly positioned to take advantage of Energy Manager: a completely safe, predictable, proven way to cut costs and save a great deal of money, year after year.

Plus, we increase your BUILDING'S VALUE. When we chop 43% off your energy bill, your Net Operating Income increases by the amount you save. And when you sell your building, the real estate market values your property based on that NOI, as shown below. For example:

*BUILDING VALUE = NET OPERATING INCOME, divided by \_\_\_\_% CAP RATE (example 8%)*

EXAMPLE FOR 575-ROOM HOTEL, ADDING OUR SYSTEM:

*575 PTACS x \$426/unit savings/year = \$244,950/year saved (means higher NOI)*

*\$244,950/year higher NOI, divided by 8% CAP RATE = \$3,061,875 Building Value Increase*

Thus, Energy Manager not only saves you money every year, but also increases your building's value by significantly increasing your NOI – the key figure investors look at when valuing your property. Don't leave money on the table – let us maximize your building's value.

## (ONE PROGRAM) Payment Schedule

Energy Manager is affordable – it pays for itself in about 15 months. After that, you keep every dollar you save, forever.

Please inquire about Financing.

Energy Manager is available with or without brand-new PTAC units.

For plans and pricing, please call **310.582.5388**

**SUMMARY:** Energy Manager cuts your energy bill by 43% *while* making guests more comfortable. Stop paying to over-heat and over-cool guestrooms (which only annoys guests), and stop wasting money to heat/cool empty rooms. Keep that money, every month, forever.

**CALL for Free Evaluation:**

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## **ABOUT (TMG)**

Our parent company was founded in 2000, and our proprietary Energy Manager system is available only through TMG. Energy Manager drives your savings, by analyzing your energy usage and enabling you to manage/reduce it centrally, without going room-to-room.

## **RESULTS OF INDEPENDENT RESEARCH**

According to the Electric Power Research Institute (EPRI), the typical, industry-standard thermostats inside your PTACS perform very poorly in regulating temperature:

*“Even shortly after installation, these thermostats generally do not maintain stable temperatures, and their performance degrades with time.” (September 1992 issue of the EPRI JOURNAL - Developments in line-voltage thermostats)*

EPRI research gives an example: With those “wandering” generic thermostats, if the average indoor temperature is approx 4°F higher than necessary, the energy consumed will be **28% higher**. That 28% is wasted energy, and wasted money. Eliminating that extra, undesired 4°F would make your guests more comfortable while saving money. (*EPRI RP 3512-05, Testing and Evaluation of Line-Voltage Thermostats*)

But waste is often greater than 4°F. EPRI reports that temperature fluctuation (“deadband”) as wide as 10°F is typical of generic thermostats:

*“The test observations of the generic line-voltage thermostat are indeed typical. A deadband as high as 10°F may be experienced.” (Heitz, E., “Thermostats: Small but Critical,” Home Energy Update, March/April 1988. Schreiber, R.J., “Assessment of Line Voltage Thermostats,” Final Report Prepared for EPRI under EPRI RP2034-29)*

And these 10°F fluctuations were documented with a generic *wall-mounted* thermostat. But for typical thermostats such as yours, located *within the PTAC unit itself*, the fluctuation (“deadband”) is usually even worse, since first, the PTAC unit heats up, and second, the PTAC unit is mounted on the hot/cold exterior wall. Both of these factors distort the PTAC internal thermostat’s response, resulting in a potentially wider deadband where the room temperature fluctuates even more than 10 degrees. This makes occupants uncomfortable AND costs an enormous amount of money in wasted energy. Guests must “fight” to maintain comfort while the PTAC unit works against them.

Waste greater than 4°F means waste beyond 28%. And the EPA confirms EPRI’s results – they state that programmable digital thermostats, such as our T-9000, can save 20% to 30% on heating/cooling – and that’s *before* we add occupancy sensors:

*“Programmable thermostats, when used properly, can save consumers 20% to 30% on heating and cooling bills.” (EPA ENERGY STAR FAQ)*



**And that just covers thermostats. This research doesn't cover the other key component of our system – occupancy sensors. Adding occupancy sensors to our precision digital thermostat boosts your savings above these numbers, since Energy Manager automatically cuts energy use depending on whether the room is occupied, unoccupied, or unsold. So you stop heating/cooling empty rooms. That's more savings for you, above and beyond these studies.**

**What's the bottom line? Every unnecessary degree of heating/cooling is wasted money from your pocket. Stop burning money. Let us cut your costs.**

**INTERESTED IN DISTRIBUTING OUR PRODUCTS? PLEASE CONTACT:**

**DISTRIBUTORS/TRADE:**

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(ONE) PROGRAM TERMS AND CONDITIONS

1. Provide TMG access to any smart metering programs provided by your utility or allow TMG to install sub meters.
2. Incorporate the solution into every piece of HVAC equipment at each facility.
3. Contract with TMG affiliate for annual cleaning of PTACs (Price included in ONE PROGRAM).
4. Contract with The Monitoring and Control Center (Price included) for analysis and suggestion. Agree to any reasonable cost reduction suggestions based on analysis.

**NOTE: ALL FIGURES HEREIN ARE ESTIMATES – YOUR RESULTS MAY VARY.**

DISCLAIMER

All figures herein are estimates. Your results may vary, depending on weather, usage, occupancy, building characteristics, system configuration, inputs to software, utility company pricing and scheduling, equipment maintenance, your existing legacy equipment, third-party programs and other factors. The figures in this document are estimated under the assumption that before TMG systems are installed, client starts with standard in-unit PTAC temperature and fan controls (no digital thermostat). If client starts with a digital thermostat of some type, TMG systems can provide savings, but at a lower rate. Neither TMG, nor AST, nor our contractors or affiliates guarantee any level of monetary savings or energy savings. While TMG systems are expandable to control many types of equipment, energy savings can only be obtained using equipment at your location that TMG hardware and software are installed to monitor and control.

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