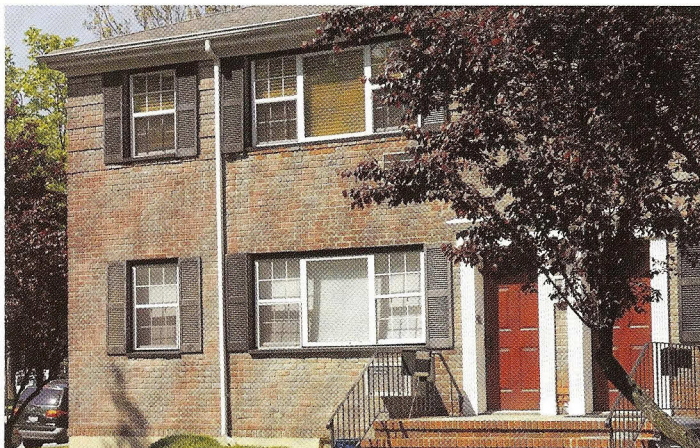




**SUBMETERING GURU ON THE JOB**

*Engineer Herbert Hirschfeld (above) at the sprawling Georgetown Mews complex (below): the co-op took “preemptive action” but first had to amend its proprietary lease, raise money, deal with potential renter objections, and drum up owner support.*



PHOTOS BY CAROL J. OTT

**SUBMETERING**

**Behavior Modification**

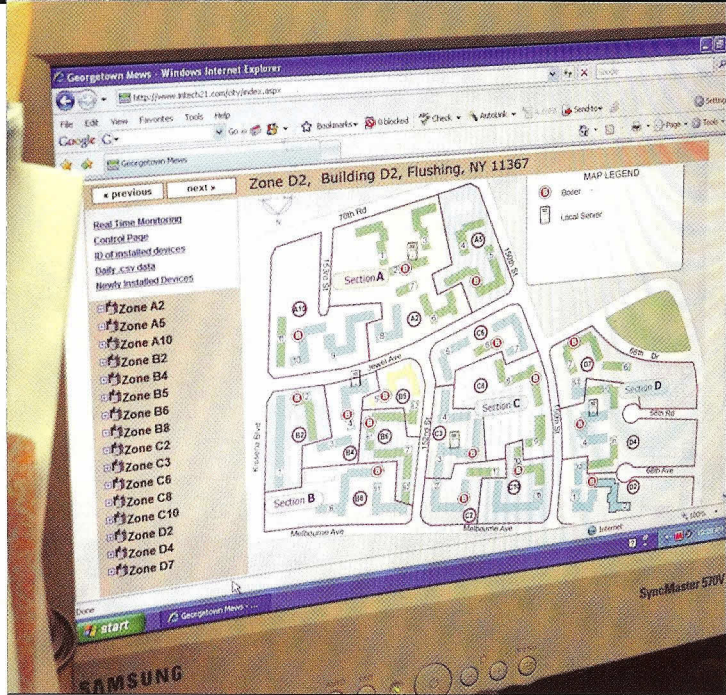
*By* **CAROL J. OTT**

**W**HAT'S A SUREFIRE WAY OF CHANGING ENERGY-USE BEHAVIOR among your building's residents? Make them pay for it.

Georgetown Mews, a 37-building, 930-unit co-op, is getting ready to do just that. For all of the property's existence, the cost of electricity has been included in monthly maintenance. Residents of this garden complex, spread over 65 acres in Queens, paid a per-share price, regardless of how much electricity they consumed. If they had air conditioners, they were charged a fixed fee based on the number of units installed in their apartments. For instance, if a shareholder had one air conditioner, the charge was \$252 a year (or \$21 a month). Hot water heating was controlled in 16 different boiler rooms, situated throughout the complex.

Because shareholders didn't get a real bill for their energy consumption, the incentive to conserve was, at best, minimal. But for the Georgetown Mews board of directors, the situation was just the opposite. "Con Ed was raising the rates through the roof," recalls Mary Fisher, the longtime board president. "It was then that we started to sit down and look at alternatives to save the co-op money."

It's been a long haul, but Georgetown Mews is in the midst of a roll-out that includes electrical submetering, a two-way wireless data communications system, temperature sensors in each apartment, a



## REAL-TIME TEMPERATURE

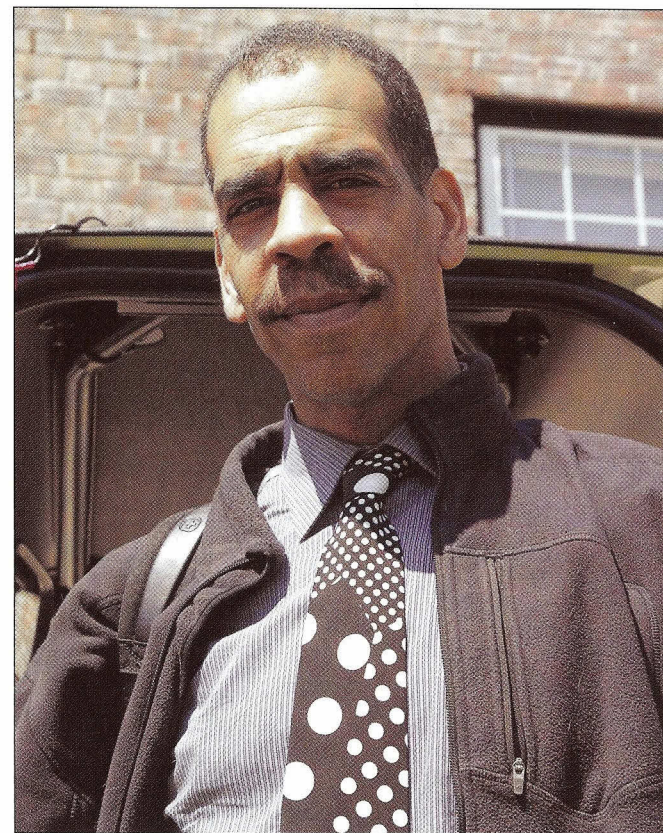
*During the heating season, building staff will be able to see real-time temperature in each apartment on a computer (top, left). “In the past we had to take a temperature reading,” says super Peter Worko (top, right). Adds NYSERDA’s Peter Douglas (left): “If you couldn’t move the information wirelessly between buildings, the whole set-up would be cost-prohibitive.”*

three-period electrical time-of-use monitor, and boiler and room air conditioner controls. When the system is fully in place, shareholders will be able to monitor their own electrical usage and watch how much it costs in the three price periods. They will then be getting their own electrical bills, effectively shifting this budget item from Georgetown Mews’s balance sheet. And the complex’s 16 boilers will be controlled by an algorithm that monitors actual temperatures in each apartment. Bottom line, after submetering goes into effect, the board expects to reduce co-op maintenance by at least seven percent.

The board began its discussion of ways to cut the energy budget eight years ago. The first step was to amend the proprietary lease, which governed how the co-op could conduct itself. Like many co-ops, it stipulated that all expenses be divided on a per-share basis. “That’s what we were doing with the fuel,” says attorney James Samson, a partner at Samson Fink & Dubow, the complex’s counsel. “That’s the problem. If you want to change how you allocate an expense, you have to amend your proprietary lease.”

Doing so took months. “It was very difficult to do,” recalls Samson. “In a garden complex with 930 units, anybody who doesn’t vote is, in effect, a ‘no’ vote. So, the board started a letter-writing campaign. It had to send out seven letters.” In 2001, the board achieved success, accumulating enough votes to amend the lease. The way was cleared to change how shareholders were billed for energy consumption.

Cleared but not completed. “Submetering is probably the most difficult energy conservation measure to implement in any residential building,” says Herbert Hirschfeld, the professional engineer who oversaw the project, “mainly be-



cause of the bureaucratic and regulatory barriers.” If you want to submeter this type of property, “you have to take preemptive action. So we decided to start with the politicians.”

The board contacted every local legislator and invited him or her to a meeting at which Hirschfeld presented the pros and cons of submetering. The reason? If one renter voices his opposition to this pay-as-you-go plan, usually to his local legislator, the whole plan must go before the Public Service Commission for approval. Since 18 percent of the complex’s apartments are rent-stabilized but owned by the co-op, the chances were good that they would find themselves seeking regulatory approval. In most cases, once this

happens, the process slows down and often dies. Consequently, the board decided to forgo pay-as-you-go pricing for the rent-stabilized tenants, picking up the energy tab for them.

Free to proceed unencumbered by regulatory roadblocks, the board, in 2005, then entered discussions with a Japanese submeter manufacturer, Osaki. Installation of this submeter didn't require access to individual units, thus skirting another potential area of resident dissent. Much legal wrangling occurred, and, by the time the contract was completed, the manufacturer had left the North American market. In retrospect, says Fisher, "it was a blessing. Everything happens for a reason in life. So, then we were back to the drawing board."

What emerged combines state-of-the-art submetering technology with two-way communications to enable control of individual apartment heating and air-conditioning equipment. Funded in large part by the New York State Energy Research and Development Authority (NYSERDA), the project cost about \$665 per apartment for the individual meters and \$144,000 for the heating distribution controls. The total cost: \$762,644. In the end, the NYSERDA incentives come to well over \$300,000.

"The project combines many features," says Peter Douglas, a NYSERDA program manager, "and it's all enabled because of advanced communication technology. If you couldn't move the information wirelessly between buildings and had to rely on physical wires, the whole set-up would be cost-prohibitive, and it might not even be achievable." The integrated system consists of a web-enabled, building-to-building communications system that transmits individual apartment submetering data in 15-minute intervals. The complex is divided into four sections, each having a separate DSL communications subsystem, which greatly reduces the monthly operational costs for the system.

When the roll-out is complete, how will it work? During the heating season, building staff will be able to see real-time temperature in each apartment on the computer in their office. "[In the past,] if a tenant [called] to complain [they were] cold, we usually would go to the boiler and turn it up," says Peter Worko, the Georgetown Mews superintendent. "Now, I can look at her apartment and say, 'Ma'am, it's 72 degrees in your apartment.' We don't have to physically go to the boiler room, crank the

boiler up, burn all this unnecessary energy just to make one person at the end feel more comfortable. Now we have information.

"Everyone complains when they are cold," Worko continues. "[But] they'll never complain that you're giving too much heat. They'll just open the window up. And you're just burning energy for no reason."

That will probably stop – or decrease – after January 2009, however, when residents will begin to get electrical bills that reflect actual usage. Until then, residents are getting shadow bills so they can see how much electricity they are actually using and in which pricing period.

"People are trying to get that kWh number to come down every month," says Worko. "I see people going out and buying the CFLs [compact fluorescent lights], putting them in, and noticing the difference. 'Wow,' they say, 'I brought my wattage usage down from 600 kWh to 480 kWh. Just by changing lightbulbs.' So it's a learning thing for people, and it's a good thing once everyone is aware of how much energy they use, and how much they waste."

An additional whistle added to all the fancy bells of this project is that NYSERDA, as part of a research and development effort to assist the complex in reducing its peak demand, is providing 100 individual through-the-wall room air conditioners that can be controlled wirelessly by the same system used for submetering, as well as by the apartment temperature sensors.

Bottom line, the Georgetown Mews project does what many co-ops and condos need to do if they are to begin changing the way residents use energy. It gives detailed information, allows them to influence it, and then submits a bill. "I tell you," says board president Fisher, "I'm becoming a little more conscious of things. Like last night, I waited [until off-peak] to blow-dry my hair." **H**

## PROJECT PROFILE

ENGINEER: Herbert E. Hirschfeld

EQUIPMENT:

Intech21 Submetering and Heating Distribution Control System

INSTALLATION:

Elemco Building Controls

INCENTIVE FUNDING:

NYSERDA

BUILDING MANAGEMENT:

Mark Greenberg Real Estate