

CAMBRIDGE HOUSING AUTHORITY

675 MASSACHUSETTS AVENUE., CAMBRIDGE, MA 02139

(617) 864-3020

November 5, 1997

Robert W. Healy, City Manager
City of Cambridge
City Hall, 798 Massachusetts Avenue
Cambridge, MA 02139

RE: City Council Orders #97 and #98 dated October 20, 1997

Dear Mr. Healy:

I am writing in response to the above-referenced City Council orders to describe the steps being undertaken to address concerns over the new heating system under construction at D.F. Burns Apartments in North Cambridge.

The Cambridge Housing Authority (CHA) is working in concert with EUA Citizens Conservation Services (CCS) and its contractor to ensure that all problems affecting the provision of heat to our residents are rectified as expeditiously as possible. Below you will find detailed information on the issues involved and our efforts to address and resolve them.

Background

Burns Apartments is one of five large all-electric housing developments owned by the CHA. It houses 198 elderly and disabled households in two 4 – 6 story buildings. Utility costs at Burns (including heat, water and sewer, hot water, cooking and lighting) averaged \$348,950 or \$1,762 per unit over the past three fiscal years for small efficiency and one-bedroom apartments. The cost of electricity on a square footage basis is the highest of all the buildings in the CHA inventory.

In an era of diminishing federal resources for the provision and operation of affordable housing, it is imperative for the Authority to explore ways to conserve energy and reduce energy costs, including conversion from electricity to more efficient and less expensive heating systems. Through a contract with CCS, Burns Apartments is being retrofitted with a new gas heat and hot water system which is projected to cut our annual heat and hot water bill in half. While there are several associated energy conservation improvements underway, approximately 85% of the savings will come from the cost differential between electricity and gas. Similar changes are planned for the other all-electric buildings in CHA's inventory.

Measures undertaken to Date

Since the new heating system became operational in mid-September there have been a variety of technical problems which, although largely resolved, continue to affect the development at this point. Issues identified to date and measures to address them are as follows:

- 4 - 8% of thermostats and zone valves have failed and have been replaced.
- At least a dozen thermostats were not accurately calibrated and required replacement.
- There was a chronic problem with air binding in the system which inhibited the flow of heat to the top floors in both buildings. In addition to the installation of a larger vent on the air separator in the boiler room, air was manually vented from the system on a periodic basis over the course of a ten-day period. The problem has dissipated, but was a major inconvenience to our residents on the top floors.
- Fourteen apartments have been identified as needing additional baseboard radiation, which will be installed next week.
- The pumps for the two buildings were mistakenly reversed, which added to the air binding problems on the top floor of the #30 Churchill building. This problem took some time to uncover, but has been rectified.
- While still under discussion between CHA/CCS and our respective engineers, it appears that the temperature of the water in the heating system was initially set too low. It has recently been increased by approximately thirty degrees, from 138 to 170 degrees. This has vastly improved the circulation of heat throughout the buildings and allows the apartments to come up to temperature more quickly in cases where windows have been open and/or the thermostat has been set too low.
- In an effort to mitigate the heating problems, the CHA has made portable electric heaters available to residents. There are currently 24 such heaters in use. Unfortunately, regular use of electric heaters tends to mask problems with the heating equipment and/or heat levels in those apartments, making it somewhat more difficult to address the actual problem.

In addition to these technical problems, the comfort of our residents has also been affected by new thermostats which limit the temperature in most apartments to 78 degrees. This heat level was identified through an extensive planning, engineering and design process to be a reasonable temperature set point for most active residents. Based on individual health circumstances and concerns expressed during construction, the CHA is now setting the upper limits in some apartments at higher than 78 degrees; this is done on a case-by-case basis.

Other Measures under Investigation

The new thermostats installed at Burns were located on an interior wall near the kitchen, an area which tends to be warmer than other areas of the apartment. The CHA is therefore considering moving the thermostats or increasing the temperature limits to compensate for the cold window walls and sliding glass doors in the living room areas.

With assistance from CCS, the CHA undertook a survey of Burns Apartments on the evenings of October 27th and 28th that involved taking unit temperatures with a digital thermometer and personal interviews with Burns' residents. The purpose of the survey was to gain a better understanding of the range of conditions in various apartments and to determine how much colder the apartments were than the set points on the thermostats. The results of this survey are summarized below:

- Of the 159 units surveyed (80% of the total units), 71% of residents had their thermostats set as high as possible. These units had an average temperature of **77.5** degrees at the thermostats and **75.7** degrees at the center of the apartment - roughly a two degree differential between the temperature at the thermostats and the temperature at the center of the apartments.
- In four apartments, the temperature at the center of the room was under 70 degrees (between 67 and 69.8 degrees). CHA has directed the contractor to investigate these apartments as soon as possible to resolve the problem.
- Thirteen thermostats (8%) had readouts which varied from our hand held digital thermometers by 3 degrees or more. These thermostats will be examined by the contractor and replaced as necessary.
- Roughly 50% of the units surveyed had A/C units. Most were not adequately weatherized, resulting in drafts. Air conditioners are generally installed in the living room window walls that tend to be the coldest area in the apartments. CCS is working with a specialty company to install custom-fit covers on all air conditioners.
- There were a high percentage of apartments with furniture and other belongings blocking the baseboard radiation and/or with closed dampers on the baseboard. These problems were reviewed with residents and in many cases, furniture was moved to allow for better heat circulation.
- Many residents have television sets and/or heat-generating table lamps directly adjacent to their thermostats, which can cause heat to be shut off in the apartment before it comes up to the temperature called for on the thermostat. Residents were receptive to suggestions for moving such items to other areas of their apartments. Where necessary, CHA will relocate cable TV hook-ups to accommodate necessary changes in TV/furniture layout.

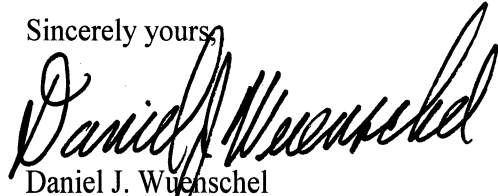
In response to the findings from the survey, the CHA with assistance from CCS and our engineers is in the process of evaluating whether to relocate some of the thermostats and/or to install a higher set point for some of the thermostats. Before proceeding, we want to make

absolutely sure that the comfort level in the apartments in the winter months is fully anticipated and addressed. I will keep you informed on our progress.

In the interim, should residents experience a problem during normal business hours they should contact the management office at Burns at 499-7004, where Pam Baxter will assist them. During evening hours and over weekends, residents experiencing any problems should contact the CHA's answering service at our main number, 864-3020. The answering service will relay any problem to CHA's emergency night crew and/or weekend maintenance personnel.

Finally, we will continue to meet with our residents on a regular basis to review the status of the project, concerns over the operation of the new system and the level of comfort in their apartments. Rest assured that we will not accept the new heating system from CCS and its contractor until all outstanding issues have been fully resolved. If there are specific questions or concerns which have not been addressed, please don't hesitate to call me.

Sincerely yours,



Daniel J. Wuchschel
Executive Director



CITY OF CAMBRIDGE
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9.

EXECUTIVE DEPARTMENT
ROBERT W. HEALY
City Manager

RICHARD C. ROSSI
Deputy City Manager

November 17, 1997

To The Honorable, The City Council:

Please find attached a response to Awaiting Report Item No. 24 and Council Order No. 98 of October 20, 1997, regarding the heating situation at elderly apartments and at Burns Apartments specifically, received from Executive Director of the Cambridge Housing Authority Daniel J. Wuenschel.

Very truly yours,

Robert W. Healy
City Manager

RWH/mec
attachment

Consent Agenda #9

S-704

Relative to Awaiting Report Item Number
Twenty-four and Council Order Number
Ninety-eight of October 20, 1997,
regarding the heating situation at
elderly apartments and at Burns
Apartment specifically.

In City Council November 17, 1997

PLACED ON FILE

City Manager to
provide updates
on an ongoing basis.