



February 15, 2008

Ms. Carol Ann Zinn  
CAZCO, Inc.  
180 Providence Road  
Suite 1B  
Chapel Hill, NC 27514

RE: Aydan Court Energy Management Plan

Dear Carol Ann,

On April 23, 2007 the Chapel Hill Town Council adopted Resolution 2007-04-23/R9 requesting that applications for Conditional Use Rezoning Map Amendments and Special Use Permits provide an energy management plan with their Special Use Permit application.

#### Energy Components of Council Resolution

The Council resolution requests that applicants act in three areas of energy utilization and production. These are:

1. A 20% more energy efficient development to reduce the carbon footprint of development,
2. To consider the use of renewable energy resources, such as solar power in the development.
3. To consider the purchase of carbon offset credits and green power through the NC Green Power Program.

The Council also seeks to have an ongoing management plan to assure that the energy efficient components of the development continue to function as designed over time.

The Energy Management Plan detailed below has been developed to fully meet the requirements and intent of the Chapel Hill Town Council Energy Resolution.

#### Energy Management Plan

Aydan Court has been designed from the outset to be a community leader in the areas of energy efficiency, carbon footprint reduction, and long term energy reduction through operational management.

## A. Energy Efficiency

Goal: Aydan Court will reduce energy use by 20% or more above the North Carolina baseline requirements.

Method: This goal will be achieved through a combination of energy efficient technologies and building design features, including more efficient HVAC, better insulation, careful selection of lighting and controls, and a better building envelope.

Element: Energy Efficient Equipment

1. Provide 15 SEER heat pumps, which are 15% more efficient than the minimum required by code.
2. Install programmable thermostats in all areas, both private and common
3. Provide high efficiency compact fluorescent lighting with space sensor controls in common areas.
4. Provide high efficiency site and parking garage lighting with space sensor, photocell and/or timer controls.

Element: Energy Efficient Building Envelope

1. Provide insulation R values that average 10% above those required by code.
2. Design units with no less than a 2% daylighting factor, whereby natural light offsets the need for artificial light, reducing energy use.
3. Install Energy Star windows with low-e glazing.

Stipulation: The applicant will provide signed and sealed engineering calculations certifying this performance to the Planning and Inspections Departments when applying for building construction permits. For site lighting fixtures this information will be presented to the CDC during approval of site lighting and building lighting plans.

## B. Renewable Energy & Carbon Footprint

Goal: To use renewable energy to reduce the carbon footprint of the project beyond that already achieved through Energy Efficiency measures.

Method: Renewable energy will be purchased from NC Greenpower by the Aydan Court HOA for all common areas. Condominium and townhome purchasers will be encouraged to purchase NC Greenpower through the education program described below.

Stipulation: The purchase of renewable for the common areas will be included in the condominium documents. These will apply to all residences in Aydan Court.

### C. Operations Management Plan

Goal: This project will have an on-going commitment to sustainability and reduced carbon footprint over time through resident education and building operations.

Method: To structure building operations to maintain the energy efficiency of the building as designed, and to provide education materials to prospective residents with sales information.

#### 1. Building Operations

- a. Assure that key maintenance are knowledgeable in the energy efficient systems and design goals of the project.
- b. CFL (compact fluorescent lamp) common area replacement program.

#### 2. Education

- a. Provide education materials on the energy efficiency, sustainable project features, NC Greenpower Program, and carbon footprint awareness to all residents in two stages. The first will be sustainable design features awareness education incorporated in sales information, and the second will be systems operation instruction and manuals provided at the time of move-in.

Stipulation: Building operations and resident education requirements will be stipulated in the condominium documents. These will apply to all residences in Aydan Court.

### D. Additional Energy Efficient Design Considerations

The form of the Aydan Court development, attached single-family homes and buildings with single floor homes (flats), is substantially more energy efficient than single-family detached homes because the design creates fewer exposed exterior walls per dwelling unit. This condition provides extra levels of air and material insulation for both heating and cooling cycles, thereby less energy is consumed in these processes.

While not often recognized as an element of energy efficiency, the development of garaged parking and parking underneath the buildings with flats (horizontal dwelling units) also promotes energy conservation. These parking designs significantly reduce the amount of impervious surface on the site, thereby reducing heat absorbed and reflected heat around buildings and reducing the heat demand on the HVAC systems. In addition, vehicles stored out of the sun create less demand on the automobile air-conditioning systems and thereby result in the consumption of less fuel and the exhaust of less heat from these vehicles when in use. While this may seem to be a minor point in energy efficiency, the Town's goals for reduced

impervious surface for water quality and vegetation retention have this ancillary added energy reduction benefit.

Submitted by,

A handwritten signature in black ink, appearing to read 'K. Daryl Carrington', written over a horizontal line.

K. Daryl Carrington, Ph.D., AIA, LEED AP  
Director of Sustainable Design