

EXHIBIT “A”

BUILDING AND DESIGN STANDARDS FOR ARRAY SUBDIVISION

The Declarant desires a modern, compact, cohesive and sustainable residential development that will maximize green space, protect natural resources, and promote the safe, healthy integration of people and nature. Array is a 12-Lot neighborhood located on 60 picturesque acres in Orange County and is North Carolina’s first 100% net-zero energy residential Community. Array is located along Orange Grove Road just 10 minutes west of downtown Carrboro and Chapel Hill, North Carolina.

This document conveys Declarant’s objectives, policies and controls for governing lot development and property modifications within ARRAY SUBDIVISION. The Guidelines and Standards contained herein apply to all Lots located within the ARRAY SUBDIVISION. No improvement shall be constructed upon any Lot within ARRAY SUBDIVISION until such improvement has been approved for compliance with the Building and Design Standards herein set forth, as provided for in Article VI of the Declaration of Covenants, Conditions, and Restrictions for ARRAY SUBDIVISION.

SECTION I

BUILDING STANDARDS

All Dwellings and other improvements, including any Accessory Dwelling, constructed upon any Lot shall comply with the following standards:

1.1 Energy:

- (a) All construction shall be NGBS Green Certified and/or Passive House Certified;
- (b) Electric energy use shall be offset by solar energy;
- (c) 10,400 kwh/yr (8KW solar system) shall be the target for all electric homes; and
- (d) 7800 kwh/yr (6KW solar system) shall be the target for homes with gas heat and water heating.

1.2 Building Envelope:

- (a) Min R19 walls shall be used;
- (b) Dwellings/homes shall be oriented for passive heating and cooling;
- (c) Roof designs shall provide a minimum of 500 sq. ft. area for solar or shall provide the necessary area for installation of solar panels as needed to achieve net-zero energy;
- (d) Whole House Leakage shall measure at 1.5 ACH50 or less;

- (e) Advanced Framing: min insulated headers, corners, and interior/exterior wall intersections;
- (f) Insulation shall be graded RESNET-defined Grade I;
- (g) Air barrier shall enclose insulation on all six sides when installed in vertical exterior walls;
- (h) Blocking and air sealing shall be used at the edge of horizontally installed insulation to separate conditioned space from unconditioned space (including garage band);
- (i) Penetrations, chases and openings to unconditioned space shall be fully sealed with solid blocking or sealant;
- (j) Insulation shall extend over top plates and wind baffles installed at all eaves;
- (k) Air seal bottom plate/sill to subfloor, slab or masonry wall shall be used;
- (l) All doors adjacent to unconditioned space shall have weatherstripping and rough openings around windows and doors shall be air sealed to framing;
- (m) Vertical drywall shall be air sealed to top plate where adjacent to unconditioned spaces, using caulk, gasket, or foamed from above;
- (n) All HVAC boots, bath exhaust fan housings, can lights, and penetrations to drywall and/or subfloor shall be air sealed;
- (o) All attic access panels and/or drop-down stairs shall be gasketed and insulated;
and
- (p) Low-E Windows shall be maximized for thermal and solar performance.

1.3 Mechanical:

- (a) Duct leakage shall measure at a maximum three percent (3%) total leakage;
- (b) Ducts and HVAC equipment shall be located within conditioned space;
- (c) Manual J Load Calculation and Manual D Duct Design shall be submitted for each home;
- (d) Humidity Management system shall be provided, but can be part of the HVAC system or an independent Humidity Management system.

1.4 Electrical:

- (a) All Refrigerators, Dishwashers and Clothes Washers shall be ENERGY STAR for 100 % installed;
- (b) All lighting shall be 100% efficient lighting: CFLs, LEDs, or ENERGY STAR Fixtures;
- (c) Any can lights penetrating the thermal envelope shall be IC rated and airtight;
- (d) Ceiling fans shall be ENERGY STAR;
- (e) Exterior lighting shall be Dark Sky approved by the International Dark-Sky Association;
- (f) All exterior lighting shall be night sky friendly;
- (g) Home wiring shall accommodate high-speed fiber internet and smart home systems; and
- (i) Electric Vehicle ready power supply shall be included.

1.5 Indoor Air Quality:

- (a) Grade around foundation shall have six (6) inches of fall over 10 feet and perimeter drain;
- (b) Crawl spaces shall be sealed and conditioned;
- (c) Minimum MERV 6 filters shall be installed for all HVAC systems;
- (d) Whole house fresh air ventilation shall be provided and shall be optimized for humid climates;
- (e) Bathrooms with a tub and/or shower shall have installed a minimum CFM rated fan;
- (f) Kitchen ventilation shall exhaust to outside and shall meet a minimum measure flow rate of 100 CFM;
- (g) All fireplaces shall have gasketed doors and be EPA certified. Non-vented or vent-free fireplaces shall be prohibited;

- (h) Carbon monoxide detectors shall be installed on every floor with sleeping areas or combustion appliances;
- (i) Low VOC paints and hardwood finishes (Greenguard certified or equivalent) shall be used;
- (j) Carpet shall be CRI Green Label Plus (IAQ) certified or equivalent;
- (k) Prefinished flooring shall meet Low VOC requirements;
- (l) Insulation shall be formaldehyde free; and
- (m) Cabinets shall be CARB certified, KCMA ESP certified, and Formaldehyde Free.

1.6 Water Efficiency:

- (a) EPA WaterSense labeled lavatory faucets shall be used (for 100% installed);
- (b) EPA WaterSense labeled toilets shall be used (for 100% installed);
- (c) All hot water lines shall be insulated and hold no more than 0.5 gallons to the furthest fixture;
- (d) Recirculation systems shall be smart or timer driven or demand activated;
- (e) Landscaping shall utilize native species, turf shall be drought tolerant;
- (f) Stormwater shall be managed on Lots using rain gardens, bioswales, or other green infrastructure;
- (g) Moisture or rain sensors shall be installed with any on-site irrigation systems; and
- (h) Irrigation (where installed) shall be supplied by non-potable water source.

1.7 Other:

- (a) Dwellings and any other improvements constructed upon any Lot shall comply with any and all additional standards as may be set forth by Declarant and/or the GRC as are reasonably necessary for the achievement of NCBS Green Certification and/or Passive House Certification, such that all Dwellings and/or other improvements located upon any Lot shall achieve Net-Zero Energy efficiency; and
- (b) Any Builder or Contractor engaged by any Owner to construct a Dwelling or other improvement upon any Lot shall work with Southern Energy Management to achieve the sustainability and energy efficiency required for ARRAY SUBDIVISION.

SECTION II
DESIGN STANDARDS

A transitional or contemporary housing style is preferred. While approved dwelling units may vary in design and appearance, they shall share the following attributes:

- (a) Permanent, site-built and high-quality dwelling units with sufficient finished, heated space to maximize marketability and energy efficiency. Dwellings between 1,250 square feet living space and 3,500 square feet living space are encouraged, but not required;
- (b) Innovative, natural and sustainable materials shall be used, as appropriate, to maximize energy efficiency; and
- (c) Exterior colors and materials that blend with the natural environment shall be used for all Dwellings and other improvements.

SECTION II
APPROVAL PROCESS

2.1 Approval Process: Prior written approval of the Declarant and/or GRC, as provided in Article VI of the Declaration of Covenants, Conditions and Restrictions for ARRAY SUSTAINABLE LIVING SUBDIVISION, is mandatory for all construction and/or development upon the Property. The approval process is described as follows:

(a) Pre-Submittal: An Owner may seek Declarant/GRC review and preliminary approval of the Summary, Site Plan and Elevations and a clear statement of the required submittal documents pending the submission of the final approval documents within six months for final approval.

(b) Submittal: Owners shall submit an *Application for Approval* and all materials requiring Declarant and/or GRC approval to the Declarant and/or GRC prior to beginning any development, including diagrams, drawings, photos and images that visually depict the proposed work, as well as the following:

(c) Review: Within five (5) days of receiving an application, the Declarant and/or GRC shall notify the applicant of its receipt, the application's completion status and any deficiencies; the Declarant and/or GRC shall commence its review immediately upon receiving all required materials (if at any time during the review process, the Declarant and/or GRC requests additional materials from the applicant, the GRC's review time may be extended).

(d) Decision: Within fifteen (15) days of receiving all requested and required materials, the Declarant and/or GRC shall complete its review and notify the applicant of its determination;

the Declarant and or GRC has full authority to interpret and grant exceptions to the Building Standards and approve compliant or reject non-compliant applications.

(e) Appeal: If the applicant disagrees with the Declarant and/or GRC decision, it is entitled to a meeting with the Declarant and/or GRC and, if after meeting with the Declarant and/or GRC, the applicant remains dissatisfied, the applicant may request a hearing with the Association Board which may confirm or overrule the Declarant and/or GRC decision.

(f) Control: If an approved development project has not commenced construction within one (1) year of approval, the approval shall be deemed rescinded and a new application shall be required; before any approved development work begins, the Owner shall submit complete construction documents to the Declarant and/or GRC; if the Declarant and/or GRC finds inconsistencies with the approved plans, it may notify the Owner of the issues to be addressed, require an explanation or corrective action from the Owner and, if necessary, nullify the approval.

(f) Other: The Owner may request an exception to the Building Standards in writing prior to proceeding with such exception and the Declarant and/or GRC may authorize said exception based upon reasonable criteria.