

June 29, 2012

Mr. Greg Guernsey
Director
City of Austin Planning & Development Review
505 Barton Springs, 5th Floor
Austin, TX 78704

RE: Broadstone at the Lake
201 South First Street & 422 West Riverside Drive
+/- 1.53 acres
Request for Zoning from Limited Industrial (LI) to
Planned Unit Development (PUD)

Dear Mr. Guernsey:

As required by the Land Development Code, the Development Assessment (CD-2012-0008) for this project was presented to City Council on Thursday, June 28, 2012. Serving as representatives of the current property owner and potential developer, we respectfully submit the enclosed PUD zoning application packet.

The 1.53 acres at South First Street and West Riverside Drive ("Project Site") is currently zoned LI-NP, which allows for a mix of industrial, commercial, and related uses. The Project Site is developed at approximately 98% impervious cover and is mostly parking and a retail store. The Project Site is located within the South Shore Central District of the Waterfront Overlay, the Bouldin Creek Neighborhood Planning Area, and the Scenic Roadway Overlay. The Future Land Use Map of the Neighborhood Plan identifies this property for mixed-use.

The South Shore Central Subdistrict of the Waterfront Overlay (Section 25-2-742) contains specific restrictions that apply to any project developed at this site including, but not limited to, a primary setback that is "35 feet north of the northern public right-of-way boundary of Riverside Drive," and a maximum height of 60 feet for any structure "located within 100 feet of the right-of-way of South Congress Avenue or South First Street." Directly adjacent to the Project Site is the Hyatt property with maximum heights of approximately 200 feet and the AquaTerra site that has a site plan which allows for a height of approximately 200 feet (approved plan calls for 19 stories).

BURY+PARTNERS
221 West Sixth Street, Suite 600
Austin, TX 78701

TEL (512) 328-0011
FAX (512) 328-0325

The goal is to use the Project Site as an opportunity to transition appropriately at the intersection of two (2) core transit corridors which have 80 to 130 feet right-of-ways and are across the street from large structures--the City offices at 505 Barton Springs Road and the Long Center.

Section 25-2-713 of the Land Development Code allows an applicant to seek a variance from subdistrict regulations "except that no variance may be granted from restrictions on maximum height." As a result, the Project Site would be restricted to 60 feet, unless a PUD modified the height. In this case, the applicant would request that a single-building PUD be utilized because of the restrictions applicable to the Project Site in the current code. The applicant is aware that the Waterfront Overlay provisions have been studied, including density bonuses, for many years and that some hope remains that a density program for the South Shore Central Subdistrict might be implemented in the next several years. Discussions concerning the South Shore Central Subdistrict have varied in terms of the heights that will be allowed, but it appears that -- given the adjacent heights -- most certainly the South Shore Central Subdistrict will be identified as an area that can support heights exceeding 60 feet. In fact, for structures located in all other areas of the subdistrict, the lower of 96 feet or the maximum height allowed in the Base Zoning District is the restriction that applies to those properties.

There is a primary setback that starts at Riverside, rather than Lady Bird Lake, and is 35 feet. In contrast, Subchapter E encourages buildings closer to the street to engage pedestrian activity. The Project Site would have pedestrian-oriented uses on the ground floor as required by the Waterfront Overlay and, therefore, the 35-foot setback seems to undermine the goal of activating the pedestrian experience, especially at this location. To this end, the applicant would propose that the PUD provide for eight (8)' planting zone, seven (7)' clear zone and supplemental zone along Riverside, instead of the 35-foot setback.

In addition to a maximum height of 75 feet, measured above the highest finished floor elevation and pedestrian friendly sidewalks on Riverside and South First, the applicant would propose that the site be limited to no more than 2,000 trips per day and that the number of driveways at the Project Site -- currently four (4) driveways -- be reduced to two (2).

Water and wastewater utilities will be provided by the City of Austin for this proposed development. Currently, there are existing water and wastewater utilities which lie within the right-of-way along South First Street as well as West Riverside Drive along the frontage of the site. A six (6)-inch cast iron waterline lies within the sidewalk along South First Street while a 12-inch wastewater line also lies within this roadway. Within West Riverside Drive, there is a 48-inch wastewater main as well as an 8-inch wastewater line. With regards to water, there is a two (2)-inch cast iron waterline available within West Riverside Drive. This data has been obtained utilizing City of Austin record data.

Given the sites' proximity to Lady Bird Lake and a reduction in impervious cover, a waiver from detention is requested. The applicant also proposes a fee-in-lieu of water quality based on the size of the site, ongoing maintenance concerns with underground facilities, location in the urban watershed, and the reduction in impervious cover. The applicant intends to provide increased open space and will earn at least seven (7) points from Section 3.3.2C *Table of Design Options* of Subchapter E. In addition, the applicant is working towards a Two Star Green Building rating. The proposed multi-family residential structure will either set aside 10% of the units for people who qualify for affordable housing at 80% of MFI or a fee-in-lieu will be paid. An additional community benefit is being considered with neighborhood stakeholders.

Because of the applicant's desire to minimize the height and provide the necessary density, the goal will be for the structure to have approximately two (2) floors of underground parking, which costs considerably more than above ground parking. For this reason, the height request can stay at 75 feet above the finished floor elevation.

We look forward to working with Staff on the PUD and are available to provide any additional information or answer questions.

Sincerely,



Melissa M. Neslund

Enclosures

Cc: Mr. Brandon Easterling, *Alliance Residential*

ZONING

APPLICATION FOR ZONING

PROJECT INFORMATION:

DEPARTMENTAL USE ONLY

APPLICATION DATE: _____ FILE NUMBER(S) _____
TENTATIVE ZAP / PC DATE: _____
TENTATIVE CC DATE: _____ CITY INITIATED: YES / NO
CASE MANAGER _____ ROLLBACK: YES / NO
APPLICATION ACCEPTED BY: _____

OTHER PROJECT DATA

OWNER'S NAME: David Dunlap
PROJECT NAME: Broadstone at the Lake
PROJECT STREET ADDRESS (or Range): 201 South First Street and 422 West Riverside Drive
ZIP 78704
COUNTY: Travis

If project address cannot be defined, provide the following information:

_____ ALONG THE _____ SIDE OF _____ APPROXIMATELY
Frontage ft. (N,S,E,W) Frontage road

_____ FROM ITS INTERSECTION WITH _____
Distance Direction Cross street

TAX PARCEL NUMBER(S): 02030002080000 and 02030002090000

AREA TO BE REZONED:

ACRES 1.53 (OR) SQ.FT. _____

EXISTING ZONING	EXISTING USE	TRACT#	ACRES / SQ. FT.	PROPOSED USE	PROPOSED ZONING
<u>LI</u>	<u>Retail</u>	<u>1</u>	<u>1.53</u>	<u>MF/</u>	<u>PUD</u>
_____	_____	_____	_____	<u>Ped Oriented</u>	_____
_____	_____	_____	_____	<u>Uses</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

RELATED CASES

NEIGHBORHOOD PLAN AMENDMENT (YES / NO)	FILE NUMBER: _____
ACTIVE ZONING CASE (YES / NO)	FILE NUMBER: _____
RESTRICTIVE COVENANT (YES / NO)	FILE NUMBER: _____
SUBDIVISION (YES / NO)	FILE NUMBER: _____
SITE PLAN (YES / NO)	FILE NUMBER: _____

PROPERTY DESCRIPTION

(For the portion affected by this application) Provide either subdivision reference OR metes & bounds description.

1. SUBDIVISION REFERENCE: Name: _____
Block(s) _____ Lot(s) _____ Outlot(s) _____
Plat Book: _____ Page Number _____ or Document # _____
2. METES AND BOUNDS (Attach two copies of certified field notes.)

ZONING

FILE NUMBER: _____

DEED REFERENCE OF DEED CONVEYING PROPERTY TO THE PRESENT OWNER:

VOLUME: 03654/04430 PAGE: 331/1136 OR DOCUMENT # _____
SQ. FT: _____ or ACRES 1.0/.53

OTHER PROVISIONS

IS A VARIANCE TO THE SIGN ORDINANCE BEING REQUESTED? YES / NO
IS PROPERTY IN A COMBINING DISTRICT / OVERLAY ZONE? YES / NO
TYPE OF COMBINING DIST/OVERLAY ZONE (NP, NCC, CVC, WO, etc) Waterfront Overlay & Scenic Roadway
NATIONAL REGISTER DISTRICT? YES / NO
URBAN RENEWAL ZONE? YES / NO
IS A TIA REQUIRED? YES / NO TRIPS PER DAY: _____
GRID NUMBER (S) J21

WATERSHED: Town Lake WS CLASS: Urban
WATER UTILITY PROVIDER: COA
WASTEWATER UTILITY PROVIDER: COA
ELECTRIC UTILITY PROVIDER: COA

OWNERSHIP INFORMATION

TYPE OF OWNERSHIP ☒ SOLE ☐ COMMUNITY PROPERTY ☐ PARTNERSHIP ☐ CORPORATION ☐ TRUST
If ownership is other than sole or community property, list the individuals, partners, principals, etc. below or attach a separate sheet.

OWNER INFORMATION

SIGNATURE: Owner Authorization Attached NAME: David Dunlap
FIRM NAME: NA TELEPHONE NUMBER: 512-328-0011
STREET ADDRESS: PO Box 517
CITY/STATE/ZIP: Austin, TX 78767

AGENT / PRINCIPAL CONTACT (If applicable)

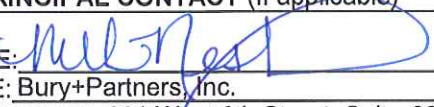
SIGNATURE:  NAME: Melissa Neslund
FIRM NAME: Bury+Partners, Inc. TELEPHONE NUMBER: 512-328-0011
STREET ADDRESS: 221 West 6th Street, Suite 600
CITY/STATE/ZIP: Austin, TX 78701
CONTACT PERSON: Melissa Neslund or Chris Randazzo, PE TELEPHONE NUMBER: 512-328-0011

Exhibit B

Form of Agency Authorization

April 9, 2012

City of Austin

Dear Ladies and Gentlemen:

This letter is authorization by the undersigned owner of that certain parcel of land in the City of Austin, Travis County, Texas, being legally described as:

Approximately 1.5739 acres of land area, more or less, out of Lot 3F, Swisher Subdivision, a subdivision in the City of Austin, Travis County, Texas, according to the plat recorded in Plat Book 1, Page 1, Plat Records of Travis County, Texas, TCAD Property ID Nos. 190729 and 190730, locally known as 422 W. Riverside & 201 South First Street, Austin, Texas, 78704, Travis County, Texas, and being locally known as 422 W. Riverside Drive, Austin, Texas, 78704 (the "Property")

for **ALLIANCE REALTY PARTNERS, LLC**, a Delaware limited liability company [and/or its specified engineers, attorneys or agents], to act as agent with the City of Austin in connection with zoning, site development plans, site development permits, unified development agreements, easements, variance requests, utility commitments and agreements, building permits and/or similar or related matters regarding the Property.



David J. Dunlap

THE STATE OF TEXAS

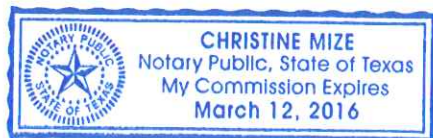
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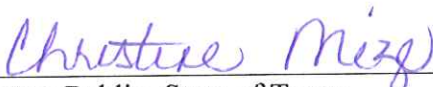
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COUNTY OF Travis

§

This instrument was acknowledged before me on the 9 day of April, 2012,
by David J. Dunlap.






Notary Public, State of Texas

ZONING

SUBMITTAL VERIFICATION

My signature attests to the fact that the attached application package is complete and accurate to the best of my knowledge. I understand that City staff review of this application is dependent upon the accuracy of the information provided and that any inaccurate or inadequate information provided by me/my firm/etc., may delay the review of this application.


PLEASE TYPE OR PRINT NAME BELOW SIGNATURE AND
INDICATE FIRM REPRESENTED, IF APPLICABLE.

 6.29.12
Signature Date
Melissa Neslund
Name (Typed or Printed)
Bury+Partners, Inc.
Firm

INSPECTION AUTHORIZATION

As owner or authorized agent, my signature authorizes staff to visit and inspect the property for which this application is being submitted.

PLEASE TYPE OR PRINT NAME BELOW SIGNATURE AND
INDICATE FIRM REPRESENTED, IF APPLICABLE.

 6.29.12
Signature Date
Melissa Neslund
Name (Typed or Printed)
Bury+Partners, Inc.
Firm

ZONING

ACKNOWLEDGMENT FORM

concerning
Subdivision Plat Notes, Deed Restrictions
Restrictive Covenants

I, Melissa Neslund, Bury+Partners, Inc. have checked the subdivision plat notes,
(Print name of applicant)

deed restrictions, and/or restrictive covenants prohibiting certain uses and/or requiring certain development restrictions i.e. height, access, screening etc. on this property, located at:

201 South First Street and 422 West Riverside Drive

(Address or Legal Description)

If a conflict should result with the request I am submitting to the City of Austin due to subdivision plat notes, deed restrictions, and/or restrictive covenants, it will be my responsibility to resolve it. I also acknowledge that I understand the implications of use and/or development restrictions that are a result of a subdivision plat notes, deed restrictions, and/or restrictive covenants.

I understand that if requested, I must provide copies of any and all subdivision plat notes, deed restrictions, and/or restrictive covenants as information which may apply to this property.



(Applicant's signature)

6.29.12

(Date)

POSTPONEMENT POLICY ON ZONING HEARINGS

- Sets a postponement date and time at the City Council hearing so that renotification of residents and property owners is not necessary.
- Limits the time a hearing can be postponed to two months for both proponents and opponents, unless otherwise approved by Council so that renotification of residents and property owners is not necessary.
- Allows only one postponement for either side, unless otherwise approved by Council.
- Requires that all requests for postponements be submitted in writing to the director of the Planning and Development Review Department at least one week prior to the scheduled Council meeting. The written request must specify reasons for the postponement.
- The Director of the Planning and Development Review Department shall provide a recommendation regarding the validity of the postponement request as the Director deems appropriate.
- Eliminates the automatic granting of a postponement of the first request.
- Authorizes Council to consider requests that are not submitted timely.

ZONING

PLANNED UNIT DEVELOPMENTS

General Overview

Planned Unit Development district zoning is intended to produce development that implements the goals of preserving the natural environment, encouraging high quality development and innovative design, and ensuring adequate public facilities and services. The City Council intends PUD district zoning to produce development that achieves these goals to a greater degree than, and is therefore superior to, development under conventional zoning and subdivision regulations.

SUBMITTAL REQUIREMENTS

- ✓ A Development Assessment must be submitted, a Master Staff Report received, and a Council briefing must occur prior to submittal of a PUD application.
- Eighteen (18) copies of a 24 x 36 inch generalized land use map which shall include the following: project name, legal description, boundary lines with bearings and dimensions, total acreage, north arrow, scale and location map.
- Existing topography using USGS or City datum at two (2) foot intervals for the property and adjacent property with 100 feet of the project boundary.
- A Mylar will be required prior to finalization of ordinance.
- Eighteen (18) copies of the proposed site development regulations to be established by the Land Use Plan.

Maps, exhibits and support materials, clearly indicating the following, shall be included in either or both of the above:

- A. Existing and/or proposed land uses. Identify for each phase and for the total development:
1. Residential: Maximum density, total number and type(s) of unit(s)*, minimum lot size, building height, minimum setbacks and maximum impervious coverage. For multifamily uses, also show maximum FAR. If structures are proposed in excess of sixty (60) feet in height, schematic drawings shall be provided which illustrate the height, bulk and location of such buildings and line-of-sight analyses from adjoining properties and/or rights-of-way.
 2. Non-Residential: Type of uses*, maximum FAR, total square footage, maximum impervious coverage, minimum setbacks and maximum building height. If structures are proposed in excess of sixty (60) feet in height, schematic drawings shall be provided which illustrate the height, bulk and location of such buildings and line-of-sight analyses from adjoining properties and/or rights-of-way.
 3. Parkland/Open Space: Location and acreage of land proposed to be dedicated to the public and/or private parks, open space or buffer areas.
 4. Civic Uses: Types of uses*, maximum FAR, total square footage, maximum impervious coverage, maximum building height and minimum setbacks.
- * Uses shall be listed at a level of detail sufficient for Traffic Impact Analysis review as required in Article III, Section 25-6 of the Land Development Code.
- C. Environmental characteristics of the site, such as, but not limited to, 100-year and 25-year floodplains, slopes, environmentally sensitive areas and protected areas as defined in applicable watershed ordinances.
- D. The phasing of the development and the manner in which each phase can exist as a stable independent unit consistent with the provision of adequate public facilities and services.
- E. The location of collector and arterial roadways proposed within the development, right-of-way widths, the location of access points to abutting streets and roadways and a Traffic Impact Analysis, if required by Article III of Chapter 25-6. (The number of copies of the required TIA will be determined by Transportation Review.)
- F. Identification of existing major street setbacks and planned right-of-way lines as required in the Austin Roadway Plan.
- G. Proposed method of providing the following services:
1. Water service including gallons per day requirement.
 2. Wastewater disposal including gallons per day generated.
 3. Preliminary stormwater management analysis.
 4. Location of all required or proposed public facilities.
- H. Identification of any waivers from City ordinances or development standards pursuant to Chapter 25-2-402.

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I. Copies of all covenants and restrictions which provide for the maintenance and taxation of all common areas.

ADDITIONAL SUBMITTAL REQUIREMENTS

A written description describing how the proposal meets the intent and purposes of the PUD Zoning District, including Tier One and Tier Two Requirements, and Development Bonuses, as outlined in City Code Chapter 25-2, Subchapter B, Article 2, Division 5, Section 1.1 through Section 2.5.7 and defined below:

§ 2.3. TIER ONE REQUIREMENTS.

2.3.1. Minimum Requirements. All PUDs must:

- A. meet the objectives of the City Code;
- B. provide for development standards that achieve equal or greater consistency with the goals in Section 1.1 (*General Intent*) than development under the regulations in the Land Development Code;
- C. provide a total amount of open space that equals or exceeds 10 percent of the residential tracts, 15 percent of the industrial tracts, and 20 percent of the nonresidential tracts within the PUD, except that:
 - 1. a detention or filtration area is excluded from the calculation unless it is designed and maintained as an amenity; and
 - 2. the required percentage of open space may be reduced for urban property with characteristics that make open space infeasible if other community benefits are provided;
- D. comply with the City's Planned Unit Development Green Building Program;
- E. be consistent with applicable neighborhood plans, neighborhood conservation combining district regulations, historic area and landmark regulations, and compatible with adjacent property and land uses;
- F. provide for environmental preservation and protection relating to air quality, water quality, trees, buffer zones and greenbelt areas, critical environmental features, soils, waterways, topography, and the natural and traditional character of the land;
- G. provide for public facilities and services that are adequate to support the proposed development including school, fire protection, emergency service, and police facilities;
- H. exceed the minimum landscaping requirements of the City Code;
- I. provide for appropriate transportation and mass transit connections to areas adjacent to the PUD district and mitigation of adverse cumulative transportation impacts with sidewalks, trails, and roadways;
- J. prohibit gated roadways;
- K. protect, enhance and preserve areas that include structures or sites that are of architectural, historical, archaeological, or cultural significance; and
- L. include at least 10 acres of land, unless the property is characterized by special circumstances, including unique topographic constraints.

2.3.2. Additional Requirements. In addition to the requirements contained in Section 2.3.1 (*Minimum Requirements*), a PUD containing a retail, commercial, or mixed use development must:

- A. comply with Chapter 25-2, Subchapter E (*Design Standards And Mixed Use*).
- B. inside the urban roadway boundary depicted in Figure 2, Subchapter E, Chapter 25-2 (*Design Standards and Mixed Use*), comply with the sidewalk standards in Section 2.2.2., Subchapter E, Chapter 25-2 (*Core Transit Corridors: Sidewalks And Building Placement*); and
- C. contain pedestrian-oriented uses as defined in Section 25-2-691(C) (*Waterfront Overlay District Uses*) on the first floor of a multi-story commercial or mixed use building

ZONING

§ 2.4. TIER TWO REQUIREMENTS.

This section contains criteria for determining the extent to which development proposed for a PUD district would be superior to that which would occur under conventional zoning and subdivision regulations as required under Section 1.1 (*General Intent*). A proposed PUD need not address all criteria in this section to achieve superiority, and the council may consider any other criteria the council deems appropriate.

Open Space	Provides open space at least 10% above the requirements of Section 2.3.1.A. (<i>Minimum Requirements</i>). Alternatively, within the urban roadway boundary established in Figure 2 of <u>Subchapter E of Chapter 25-2</u> (<i>Design Standards and Mixed Use</i>), provide for proportional enhancements to existing or planned trails, parks, or other recreational common open space in consultation with the Director of the Parks and Recreation Department.
<u>Environment</u>	Does not request exceptions to or modifications of environmental regulations.
	Provides water quality controls superior to those otherwise required by code.
	Uses innovative water quality controls that treat at least 25 percent additional water quality volume and provide 20 percent greater pollutant removal, in addition to the minimum water quality volume required by code.
	Provides water quality treatment for currently untreated, undeveloped off-site areas with a drainage area of at least 25 percent of the subject tract.
	Reduces impervious cover or single-family density by five percent below the maximum otherwise allowed by code or includes off-site measures that lower overall impervious cover within the same watershed by five percent below that allowed by code.
	Provides minimum 50-foot setback for unclassified waterways with a drainage area of five acres or greater.
	Provides at least a 50 percent increase in the minimum waterway and critical environmental feature setbacks required by code.
	Clusters impervious cover and disturbed areas in a manner that preserves the most environmentally sensitive areas of the site that are not otherwise protected.
	Provides pervious paving for at least 50 percent or more of all paved areas in non-aquifer recharge areas.
	Prohibits uses that may contribute to air or water quality pollutants.
	Employs other creative or innovative measures.
Austin Green Builder Program	Provides a rating under the Austin Green Builder Program of three stars or above.
Art	Provides art approved by the Art in Public Places Program in open spaces, either by providing the art directly or by making a contribution to the City's Art in Public Places Program or a successor program.

ZONING

Great Streets	Complies with City's Great Streets Program, or a successor program. Applicable only to commercial, retail, or mixed-use development that is not subject to the requirements of <u>Chapter 25-2, Subchapter E (Design Standards and Mixed Use)</u> .
Community Amenities	Provides community or public amenities, which may include spaces for community meetings, day care facilities, non-profit organizations, or other uses that fulfill an identified community need.
Transportation	Provides bicycle facilities that connect to existing or planned bicycle routes or provides other multi-modal transportation features not required by code.
Building Design	Exceeds the minimum points required by the Building Design Options of Section 3.3.2. of <u>Chapter 25-2, Subchapter E (Design Standards and Mixed Use)</u> .
Parking Structure Frontage	In a commercial or mixed-use development, at least 75 percent of the building frontage of all parking structures is designed for pedestrian-oriented uses as defined in Section <u>25-2-691(C) (Waterfront Overlay District Uses)</u> in ground floor spaces.
Affordable Housing	Provides for affordable housing or participation in programs to achieve affordable housing.
Historic Preservation	Preserves historic structures, landmarks, or other features to a degree exceeding applicable legal requirements.
Accessibility	Provides for accessibility for persons with disabilities to a degree exceeding applicable legal requirements.
Local Small Business	Provides space at affordable rates to one or more independent retail or restaurant small businesses whose principal place of business is within the Austin metropolitan statistical area.

§ 2.5. DEVELOPMENT BONUSES.

- 2.5.1. Limitation on Development.** Except as provided in Section 2.5.2 (Requirements for Exceeding Baseline), site development regulations for maximum height, maximum floor area ratio, and maximum building coverage in a PUD with residential uses may not exceed the baseline established under Section 1.3.3 (Baseline for Determining Development Bonuses).
- 2.5.2. Requirements for Exceeding Baseline.** Development in a PUD with residential uses may exceed the baseline established under Section 1.3.3 (Baseline for Determining Development Bonuses) for maximum height, maximum floor area ratio, and maximum building coverage if:
- A. the application for PUD zoning includes a report approved by the Director of the Neighborhood Housing and Community Development Department establishing the prevailing level of affordability of housing in the vicinity of the PUD, expressed as a percentage of median family income in the Austin metropolitan statistical area; and
 - B. the developer either:
 - 1. provides contract commitments and performance guarantees that provide affordable housing meeting or exceeding the requirements of Section 2.5.3 (Requirements for Rental Housing) and Section 2.5.4 (Requirements for Ownership Housing); or
 - 2. makes donations for affordable housing under Section 2.5.6 (Alternative Affordable Housing Options).

ZONING

- 2.5.3. Requirements for Rental Housing.** If rental housing units are included in a PUD, at least 10 percent of the rental units or rental habitable square footage within the PUD must:
- A. be affordable to a household whose income is less than the affordability level established under Section 2.5.5 (*Affordability Levels*);
 - B. remain affordable for 40 years from the date a certificate of occupancy is issued; and
 - C. be eligible for federal housing choice vouchers.
- 2.5.4. Requirements for Ownership Housing.** If owner occupied housing is included in a PUD, at least five percent of the owner occupied units or owner occupied habitable square footage within the PUD must be:
- A. affordable to a household whose income is less than the affordability level established under Section 2.5.5 (*Affordability Levels*); and
 - B. transferred to the owner subject to a shared equity agreement approved by the Director of the Neighborhood Housing and Community Development Department.
- 2.5.5. Affordability Levels.** For purposes of this subchapter, the affordability level is:
- A. for a portion of a PUD within the urban roadway boundary depicted in Figure 2 of Subchapter E of Chapter 25-2 (*Design Standards and Mixed Use*), 80% of the median family income in the Austin metropolitan statistical area;
 - B. for a portion of a PUD outside the urban roadway boundary depicted in Figure 2 of Subchapter E of Chapter 25-2 (*Design Standards and Mixed Use*), 60% of the median family income in the Austin metropolitan statistical area; or
 - C. if the Council finds that the prevailing level of affordability of housing in the vicinity of the PUD is lower than the level applicable under Paragraph A or B, any lesser percentage of the median family income in the Austin metropolitan statistical area established by the Council.
- 2.5.6. Alternative Affordable Housing Options.** Development within a PUD may exceed baseline standards as provided in Section 2.5.2.B.2 (*Requirements for Exceeding Baseline*) if the developer:
- A. donates to the Austin Housing Finance Corporation land within the PUD that is appropriate and sufficient to develop 20 percent of the residential habitable square footage planned for the PUD, as determined by the Director of the Neighborhood Housing and Community Development Department; or
 - B. subject to approval by the city council, donates the amount established under Section 2.5.7 (*In Lieu Donation*) for each square foot of climate controlled space within the PUD to a Housing Assistance Fund to be used for producing or financing affordable housing, as determined by the Director of the Neighborhood Housing and Community Development Department.
- 2.5.7. In Lieu Donation.** The amount payable under Section 2.5.6.B (*Alternative Affordable Housing Options*) shall be 60 percent of the fee established under Section 25-2-586(l) (*Affordable Housing Incentives in a Central Business District or Downtown Mixed Use Zoning District*) or any successor fee established under the Austin Downtown Plan.

ZONING



EXHIBIT A

EDUCATIONAL IMPACT STATEMENT (EIS) DETERMINATION

PART A

If your project is located in the Austin Independent School District, requires Land Use Commission review; and meets one of the requirements listed below, an Educational Impact Statement is required.

<input type="checkbox"/> <u>YES</u>	<input checked="" type="checkbox"/> <u>NO</u>	<u>100 or more single family units are proposed</u>
<input checked="" type="checkbox"/> <u>YES</u>	<input type="checkbox"/> <u>NO</u>	<u>200 or more multifamily units are proposed</u>
<input type="checkbox"/> <u>YES</u>	<input checked="" type="checkbox"/> <u>NO</u>	<u>100 or more multifamily units are proposed and a tax credit is requested</u>
<input type="checkbox"/> <u>YES</u>	<input checked="" type="checkbox"/> <u>NO</u>	<u>project will demolish more than 50 residential existing units in a structure more than 20 years old</u>

If an Educational Impact Statement (EIS) is required, please complete the Educational Impact Analysis (EIA) Part B.

ZONING



EDUCATIONAL IMPACT ANALYSIS FORM

Part B

OFFICE USE ONLY

CASE MANAGER: _____

APPLICANT/AGENT: _____

CASE NUMBER: _____

PROJECT NAME: _____

PROJECT ADDRESS: _____

PROPOSED USE: _____

EXISTING RESIDENTIAL UNITS

Existing Number of Residential Units: NA

Number of existing residential units to be demolished: NA

Age of units to be demolished: NA

PROPOSED DEVELOPMENT

Gross Project Acreage: 1.53

Number of lots: 1

Lots per acre: 1

PROPOSED RESIDENTIAL UNITS

Proposed number of Residential Units: 210-220

Size of proposed units in square feet (specify range): 550-1,500

Number of bedrooms per unit: 1-2

ZONING

ESTIMATED SELLING / RENTAL PRICE (EXISTING AND PROPOSED)

Estimated selling price of units (specify range): NA

Estimated rental rates (if applicable): \$750-\$2,500

Range of monthly rental rates to be demolished: NA to NA

Estimated increase in rental rates (specify percentage of increase): NA

If project is multifamily, will a tax credit be applied for as part of the Smart Housing™ Program? No

Number of Certified Affordable Dwelling Units (Proposed or Existing) NA

OFF-SITE FAMILY AMENITIES EXISTING WITHIN ONE MILE OF PROJECT

(Open to the public – attach location plan)

Parks/Greenbelts: Auditorium Shores; Butler Hike and Bike Trail; Lady Bird Lake and City parkland

Recreation Centers: NA

Public Schools: NA

PARKLAND DEDICATION

Parkland dedication required? ☒ YES ☐ NO

If yes, please indicate if applicant plans to request fee in lieu or provide parkland.

Fee: ☒ YES ☐ NO

Land: ☐ YES ☒ NO

ON-SITE FAMILY AMENITIES PROPOSED

Will space be provided for childcare services? ☐ YES ☒ NO ☐ Unknown at this time

Amount of open space required in acres: 6,664 sf (.15 ac)

Amount of open space provided in acres: 9,996 sf (.22 ac)

Other proposed amenities: (pools, clubhouse, recreation area): Pool, clubhouse, pedestrian oriented uses

TRANSPORTATION LINKAGES

Closest Public Transit Location: At the site, along Riverside Dr.

Pedestrian/Bike Routes: Butler Trail in close proximity

DEVELOPMENT ASSESSMENT & ALTERNATIVE EQUIVALENT COMPLIANCE

CITY OF AUSTIN TRAFFIC IMPACT ANALYSIS (TIA) DETERMINATION WORKSHEET

APPLICANT MUST FILL IN WORKSHEET PRIOR TO SUBMITTING FOR TIA DETERMINATION

PROJECT NAME: Broadstone at the Lake

LOCATION: 422 West Riverside Drive

APPLICANT: Bury+Partners, Inc. TELEPHONE NO: 512-328-0011

APPLICATION STATUS: DEVELOPMENT ASSESSMENT: _____ ZONING: X SITE PLAN: _____

EXISTING:

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	BLDG SQ.FT.	ZONING	LAND USE	L.T.E CODE	TRIP RATE	TRIPS PER DAY
1	1.53	11,859	LI-NP	Retail	814	EQN	545
						TOTAL	545

PROPOSED

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	BLDG SQ.FT.	ZONING	LAND USE	L.T.E CODE	TRIP RATE	TRIPS PER DAY
1	1.53	212 DU	PUD	Apartments	220	EQN	1457
1	1.53	9,405	PUD	Specialty Retail	814	EQN	440
						TOTAL	1897
						Net Increase	1352

ABUTTING ROADWAYS

FOR OFFICE USE ONLY

STREET NAME	PROPOSED ACCESS?	PAVEMENT WIDTH	CLASSIFICATION
South First Street	Yes	Varies	Minor Arterial
West Riverside Drive	Yes	Varies	Major Arterial

FOR OFFICE USE ONLY

— A traffic impact analysis is required. The consultant preparing the study must meet with a transportation planner to discuss the scope and requirements of the study before beginning the study.

✓ A traffic impact analysis is NOT required. The traffic generated by the proposal does not exceed the thresholds established in the Land Development Code.

— The traffic impact analysis has been waived for the following reason: _____

— A neighborhood traffic analysis will be performed by the City for this project. The applicant may have to collect existing traffic counts. See a transportation planner for information.

REVIEWED BY: Joe R. Ching DATE: June 28, 2012

DISTRIBUTION:

- Sets a postponement date and time at the City Council hearing so that renotification of residents and property owners is not necessary.
- Limits the time a hearing can be postponed to two months for both proponents and opponents, unless otherwise approved by Council so that renotification of residents and property owners is not necessary.
- Allows only one postponement for either side, unless otherwise approved by Council.

OF LONDON

Volume 100, Part 1, 1970

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Published for the Institute by the Cambridge University Press

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Existing Broadstone
Summary of Multi-Use Trip Generation
Average Weekday Driveway Volumes
June 28, 2012

Land Use	Size	24 Hour	AM Pk Hour		PM Pk Hour	
		Two-Way Volume	Enter	Exit	Enter	Exit
Specialty Retail Center						
11.589 Th.Sq.Ft. GLA		514	0	0	14	18
Total Driveway Volume		514	0	0	14	18
Total Peak Hour Pass-By Trips			0	0	0	0
Total Peak Hour Vol. Added to Adjacent Streets			0	0	14	18

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Existing Broadstone
Summary of Multi-Use Trip Generation
Saturday and Sunday Driveway Volumes
June 28, 2012

Land Use	Size	Saturday			Sunday		
		24 Hr	Peak Hour		24 Hr	Peak Hour	
		2-Way	Vol. Enter	Exit	2-Way	Vol. Enter	Exit
Specialty Retail Center							
	11.589 Th.Sq.Ft. GLA	487	0	0	237	0	0
Total Driveway Volume		487	0	0	237	0	0
Total Peak Hour Pass-By Trips			0	0			
Total Pk Hr Vol Added to Adjacent Streets			0	0			

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Broadstone at the Lake Opt 1
Summary of Multi-Use Trip Generation
Average Weekday Driveway Volumes
June 28, 2012

Land Use	Size	24 Hour	AM Pk Hour		PM Pk Hour	
		Two-Way Volume	Enter	Exit	Enter	Exit
Apartments	220 Dwelling Units	1457	22	89	90	49
Specialty Retail Center	9.405 Th.Sq.Ft. GLA	417	0	0	11	14
Total Driveway Volume		1874	22	89	101	63
Total Peak Hour Pass-By Trips			0	0	0	0
Total Peak Hour Vol. Added to Adjacent Streets			22	89	101	63

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Broadstone at the Lake Opt 1
 Summary of Multi-Use Trip Generation
 Saturday and Sunday Driveway Volumes
 June 28, 2012

Land Use	Size	Saturday			Sunday		
		24 Hr	Peak Hour		24 Hr	Peak Hour	
		2-Way Vol.	Enter	Exit	2-Way Vol.	Enter	Exit
Apartments	220 Dwelling Units						
		1471	0	0	1311	0	0
Specialty Retail Center							
	9.405 Th.Sq.Ft. GLA	395	0	0	192	0	0
Total Driveway Volume		1866	0	0	1503	0	0
Total Peak Hour Pass-By Trips			0	0			
Total Pk Hr Vol Added to Adjacent Streets			0	0			

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS



Memorandum

To: Intake Division

From: Maureen Meredith, Senior Planner
Planning & Development Review Dept. (974-2695)

Date: June 25, 2012

Subject: Riverside Drive and S. 1st Street (RunTex)

The above property is located within the Bouldin Creek Neighborhood Plan.

The zoning change request is from **LI-NP to Planned Unit Development (PUD) for Multifamily and Retail uses**.

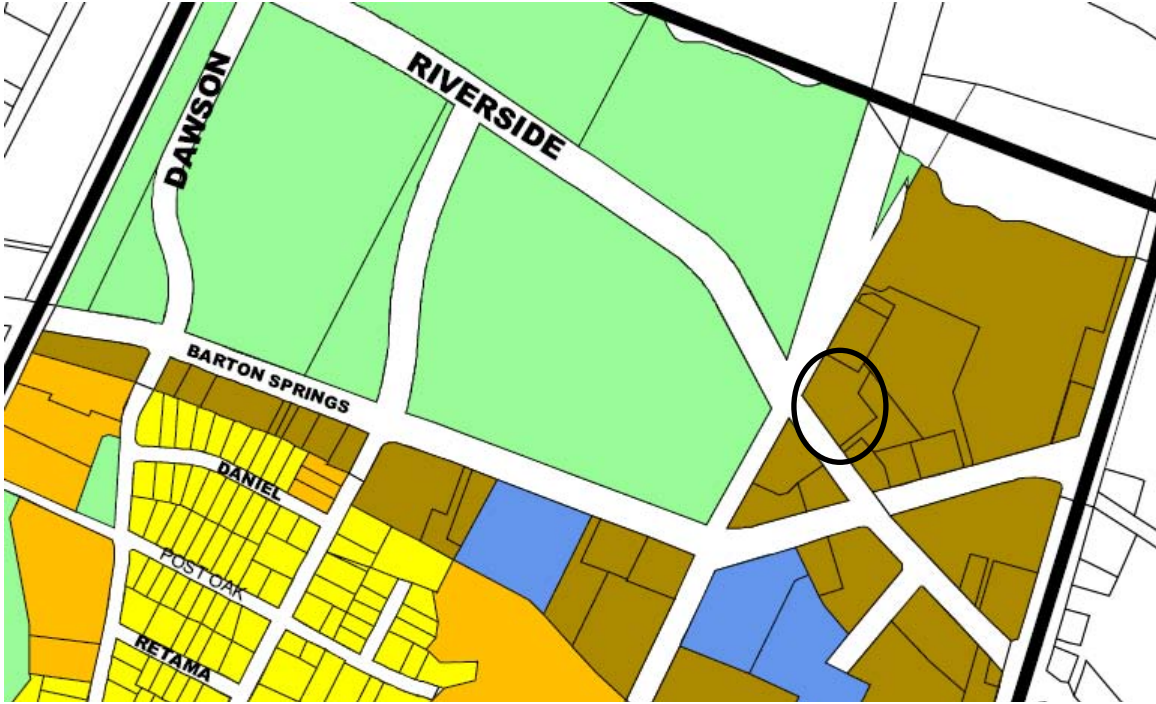
The current land use on the future land use map is: **Mixed Use**
The proposed land use is: **Mixed use**

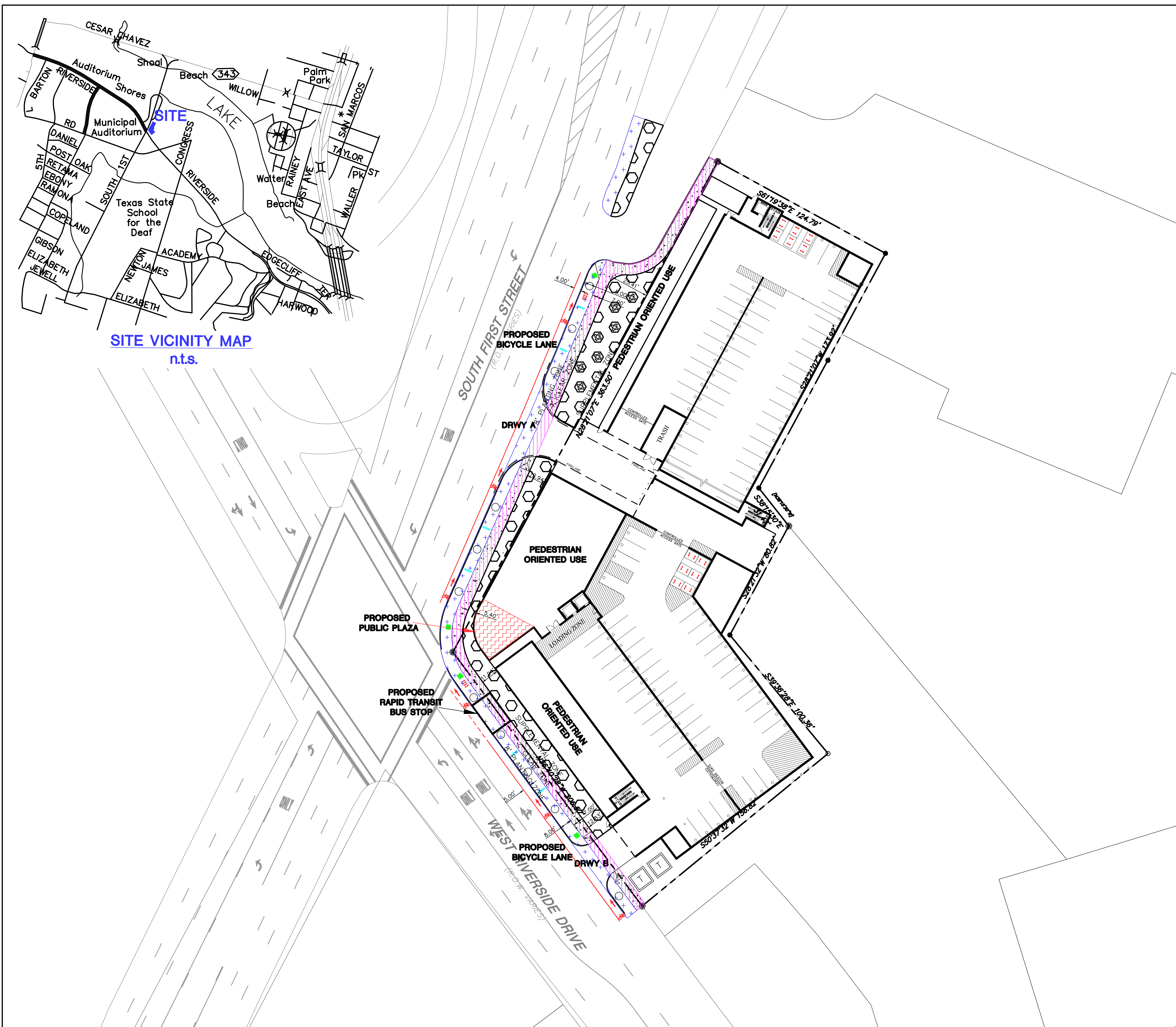
A plan amendment **is NOT** required.

Please call me if you have any questions.

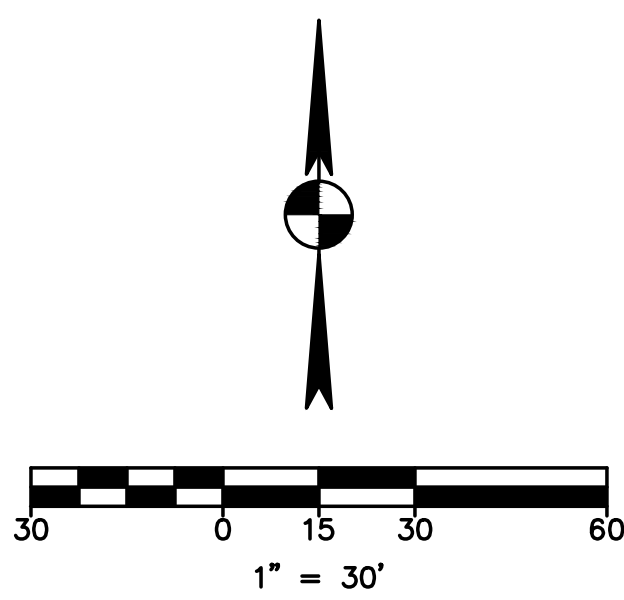
Maureen

Attachment: Map of area





SITE VICINITY MAP
n.t.s.



LEGEND	
PROPOSED	
○	STREET TREES
—	STREET FURNITURE
■	TRASH BINS
—	BICYCLE PARKING
⊕	SUPPLEMENTAL ZONE FURNITURE

ACREAGE: 1.53

SITE DEVELOPMENT REGULATIONS:

MAX NO. OF UNITS: 220

MAX HEIGHT: 75'

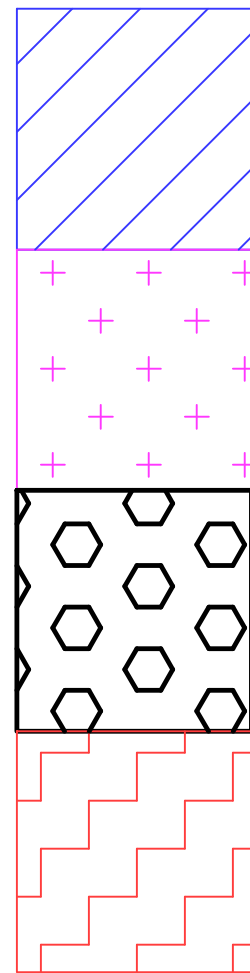
MAX F.A.R.: 4:1

MIN SETBACKS: 15' RIVERSIDE DR.

0' S. FIRST ST.

0' INTERIOR

MAX IMPERVIOUS COVER: 95%



8' PLANTING ZONE

7' CLEAR ZONE

SUPPLEMENTAL ZONE
±5710 SF

PUBLIC PLAZA

NOTES:

1. THE PROPOSED CAPITAL METRO RAPID TRANSIT BUS STOP SHALL BE INTEGRATED INTO THE PLANTING AND CLEAR ZONE IN ORDER TO ACCOMMODATE CAPITAL METRO'S DESIGN.
2. THE NUMBER AND LOCATION OF THE STREET TREES, BENCHES, TRASH BINS, AND OTHER FURNITURE REFLECTED HEREON ARE STRICTLY FOR ILLUSTRATIVE PURPOSES. THE OWNER SHALL IDENTIFY AND SET FORTH ON THE SITE PLAN DEVELOPMENT PERMIT THE NUMBER, TYPE, AND LOCATION OF THESE ITEMS.
3. THE BICYCLE LANE STRIPING REFLECTED HEREON IS SUBJECT TO THE APPROVAL OF THE DIRECTOR OF THE PUBLIC WORKS AND TRANSPORTATION DEPARTMENT.
4. THE SIZE AND CONFIGURATION OF THE PUBLIC PLAZA AT THE INTERSECTION OF SOUTH FIRST STREET AND RIVERSIDE DRIVE AS SHOWN HEREON IS FOR ILLUSTRATIVE PURPOSES. THE OWNER WILL ESTABLISH AND SET FORTH ON THE SITE PLAN DEVELOPMENT PERMIT THE SIZE AND CONFIGURATION OF SUCH PUBLIC PLAZA.

LAND USE PLAN

BROADSTONE AT THE LAKE
AUSTIN, TEXAS

ALLIANCE RESIDENTIAL

DRAWN BY: BUT
DESIGNED BY: BUT
REVIEWED BY: CLR
PROJECT NO.: 100125-10005

SHEET
EXH

EXHIBIT E

SITE DEVELOPMENT REGULATIONS TABLE

Except as otherwise provided in this ordinance, development of the Property shall comply with the site development regulations for the Commercial Services (CS) district, including the provisions of Subchapter E (*Design Standards and Mixed Use*), and the provisions of Section 25-2-721 (*Waterfront Overlay (WO) Combining District Regulations*), Section 25-2-742 (*South Shore Central Subdistrict Regulations*).

1. The Maximum Height shall be seventy-five (75) feet measured from the highest finished floor elevation for the first floor of the building. HVAC and other equipment and improvements excepted from the maximum height limit under Section 25-2-531 (*Height Limit Exceptions*) shall be placed above the highest occupiable space of the building.
2. The Minimum Setback for the street yard on Riverside shall be fifteen (15) feet, and there are no minimum street yard on South First Street and no minimum interior side yard or rear yard setbacks.
3. The Maximum Floor Area Ratio shall be 4:1.
4. There shall be no minimum site area requirements for any dwelling unit within the building. Except as provided in this ordinance, there are no other restrictions on the number or size of the dwelling units that may be constructed on the Property.
5. All residential development shall comply with Austin Energy Green Building Program (GBP) in effect May 9, 2012, a copy of which is attached hereto, for a minimum two-star rating. Certification from the GBP shall be met.
6. The building shall be designed to earn at least seven (7) points from Section 3.3.2(C)(*Table of Design Options*) of Subchapter E.
7. Except as otherwise provided in the Land Use Plan and this ordinance, the improved Right-of-Way of Riverside Drive and South First Street immediately adjacent to the Property shall be developed as set forth on **Exhibit E-1** attached hereto. The portion of the Property and the right-of-way area between the building and the curbs on Riverside Drive and South First Street shall consist of plantings zone, clear zones and supplemental zones as shown on the Land Use Plan and Exhibit E-1. Alternative Equivalent Compliance procedures of Section 1.5.1 of Subchapter E (*Design Standards and Mixed Use*) shall be available for all sections of Subchapter E. The area within the planting zones, clear zones and the supplemental zones shall not be included in any impervious cover calculation, and shall be credited towards satisfying the open space requirements.

8. Native shade trees selected from Appendix N (*City of Austin Preferred Plant List*) of the Environmental Criteria with a minimum diameter of 3 inches shall be planted every 30 feet on center within the clear zones as reflect on Exhibit E-1. All street furniture and other improvements within the planting zones and the supplemental zones shall be installed at the expense of the owner and all such street furniture and improvements (other than street trees and furniture and improvements for accessory outdoor dining) shall be dedicated and conveyed to the public when installed. All street trees and the associated irrigation systems and all furniture and improvements for accessory outdoor dining shall be installed at the expense of the owner and shall be owned, maintained and replaced, as may be necessary, by the owner.

9. No license agreement shall be required for the construction and installation of street furniture and other improvements within the clear zones, the planting zones and the supplemental zones, including the installation of street trees and other private furniture and improvements; provided the owner shall provide evidence of a commercial liability insurance policy with a limit of at least \$1,000,000 reflecting the City as an additional insured with respect to the construction and installation of such street furniture and other improvements.

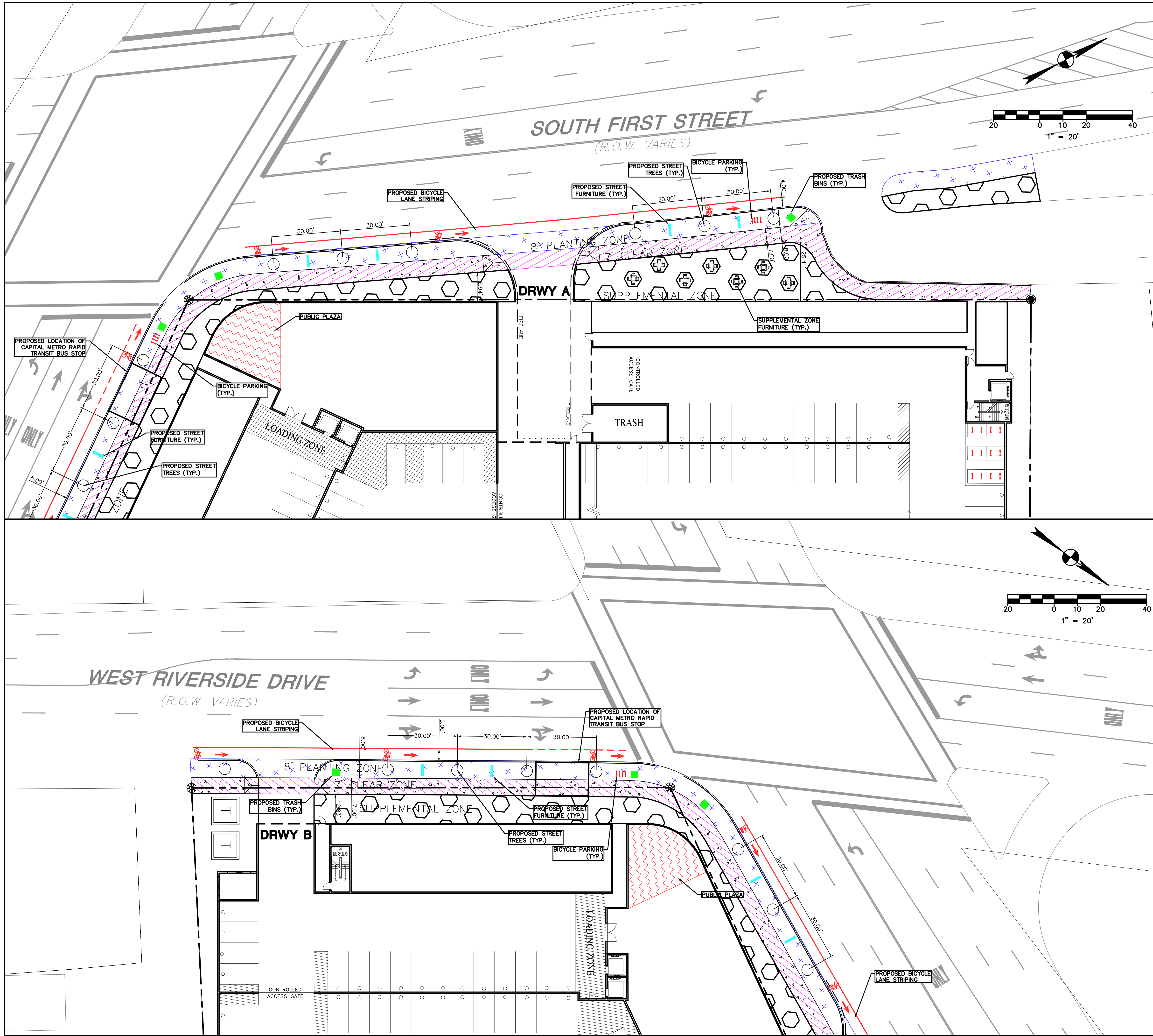
10. Balconies that are more than 15 feet above the finished grade of the sidewalk within the clear zones and the supplemental zones adjacent to the building shall be permitted, and no license agreement shall be required for the construction or maintenance of any such balconies that do not encroach more than 10 feet into the right-of-way of the adjacent street. All such balconies shall be part of the building and shall be maintained and repaired as necessary by the owner of the building.

11. The minimum total amount of open space shall be 15% of the gross site area of the Property. Decks, balconies, patios, and water quality facilities, such as rain gardens, rainwater collection areas, vegetative filter strips, biofiltration and porous pavement for pedestrian use, shall be included as open space. Vegetative roofs and other landscaped areas of roofs shall be permitted and all such areas that are at least 5 feet in width shall be included as open space for purposes of complying with the 15% minimum open space requirement. All of the open space on the ground floor and all upper floors will be credited toward meeting the minimum open space requirement.

12. A portion of the Property is located within Zone “AO” on the Federal Emergency Management Agency Flood Insurance Map and the building shall encroach on the 100-year flood plain as reflected on the Land Use Plan. The finished floor elevation of the building shall be at least two feet above 100-year flood plain; normal access to the building as shown on the Land Use Plan is by direct connection with an area above the Design Flood Elevation as defined in Section 1612.2 of the Building Code; the construction of the building shall compensate for the flood plain volume displaced by the building; and the building shall comply with the requirements of Section G102.3 of Appendix G (*Flood Resistant Construction*) of the Building Code.

13. All existing overhead electric lines located within the right-of-way adjacent to the Property shall be relocated within such right-of-way to be underground lines as reflected on the Land Use Plan.

14. A payment instead of structural controls under Section 25-8-214 (*Optional Payment Instead of Structural Controls in Urban Watersheds*) of the City Code shall be permitted and is approved for the Property. The amount of such payment shall be calculated and paid at the time the site development permit/site plan for the Property is released.
15. No on-site detention shall be required for the development of the Property.
16. An outdoor seating area for a restaurant or cocktail lounge use shall not be included in the calculation of gross floor area for purposes of determining the parking requirement for such restaurant or cocktail lounge.
17. The minimum off-street parking requirement for residential uses is 60% of the requirement prescribed by Appendix A (*Tables of Off-Street Parking and Loading Requirements*) of Chapter 25-6. The minimum off-street parking requirement for a pedestrian oriented use is 20% of the requirement prescribed by Appendix A (*Tables of Off-Street Parking and Loading Requirements*) of Chapter 25-6.
18. The total number of off-street parking facilities for bicycles shall be a minimum number equal to 5% of the total number of motor vehicle spaces required by Appendix A (*Tables of Off-Street Parking and Loading Requirements*) of Chapter 25-6. Such minimum number of off-street bicycle parking facilities shall be provided within the “planting zone” along Riverside Drive and South First Street and/or within the parking garage constructed on the Property, which bicycle facilities within the garage may include bicycle storage for occupants of the Property.
19. A single driveway is permitted on Riverside Drive and a single driveway is permitted on South First Street as shown on the Land Use Plan or as the Land Use Plan is modified by the site development permit/site plan.
20. A single loading zone shall be required as reflected on the Land Use Plan to serve the combination of uses within the building to be constructed on the Property.
21. All signage on the Property shall comply with the requirements of Section 25-10-129 (*Downtown Sign District Regulations*).
22. The lesser of at least 10 percent of the residential rental units or the residential rental habitable square footage must (a) be affordable to a household whose income is less than 80% of the median family income in the Austin metropolitan statistical area, and (ii) remain affordable for 40 years after the date the certificate of occupancy for the residential rental habitable portion of the building is issued. Notwithstanding the forgoing, in lieu of complying with this affordable housing requirement, the payment of a fee may be made to a Housing Assistance Fund to be used for producing or financing affordable housing, such fund to be identified by the Director of Neighborhood Housing and Community Development Department. The amount of such fee shall be 60% of the fee established under Section 25-2-586(I)(*Affordable Housing Incentives in a Central Business District or Downtown Mixed Use Zoning District*) at the time of the payment of fee.



LEGEND

PROPOSED	STREET TREES
	STREET FURNITURE
	TRASH BINS
	BICYCLE PARKING
	SUPPLEMENTAL ZONE FURNITURE

8' PLANTING ZONE

7' CLEAR ZONE

SUPPLEMENTAL ZONE
±5710 SF

PUBLIC PLAZA

- NOTES:**
1. THE NUMBER AND LOCATION OF THE STREET TREES, BENCHES, TRASH BINS, AND OTHER FURNITURE REFLECTED HEREON ARE STRICTLY FOR ILLUSTRATIVE PURPOSES. THE OWNER SHALL IDENTIFY AND SET FORTH ON THE SITE PLAN DEVELOPMENT PERMIT THE NUMBER, TYPE, AND LOCATION OF THESE ITEMS.
 2. THE BICYCLE LANE STRIPING REFLECTED HEREON IS SUBJECT TO THE APPROVAL OF THE DIRECTOR OF THE PUBLIC WORKS AND TRANSPORTATION DEPARTMENT.
 3. THE SIZE AND CONFIGURATION OF THE PUBLIC PLAZA AT THE INTERSECTION OF SOUTH FIRST STREET AND RIVERSIDE DRIVE AS SHOWN HEREON IS FOR ILLUSTRATIVE PURPOSES. THE OWNER WILL ESTABLISH AND SET FORTH ON THE SITE PLAN DEVELOPMENT PERMIT THE SIZE AND CONFIGURATION OF SUCH PUBLIC PLAZA.

EXHIBIT E-1

**BROADSTONE AT THE LAKE
AUSTIN, TEXAS**

ALLIANCE RESIDENTIAL

DRAWN BY: BJT
DESIGNED BY: BJT
REVIEWED BY: CLR
PROJECT NO.: 100125-10005

SHEET
EXH

DESCRIPTION OF 1.533 ACRES

DESCRIPTION OF 1.533 ACRES, OR 66,768 SQUARE FEET OF LAND, MORE OR LESS, OUT OF LOT 3-F, SWISHER'S ADDITION, A SUBDIVISION OF RECORD IN BOOK 1, PAGE 1, PLAT RECORDS, TRAVIS COUNTY, TEXAS, AND BEING THE SAME TRACT DESCRIBED AS 0.970 OF ONE ACRE IN A DEED TO DAVID J. DUNLAP, OF RECORD IN VOLUME 3654, PAGE 331, DEED RECORDS, TRAVIS COUNTY, TEXAS AND ALSO THAT TRACT DESCRIBED IN A DEED TO DAVID J. DUNLAP, OF RECORD IN VOLUME 4430, PAGE 1136, DEED RECORDS, TRAVIS COUNTY, TEXAS; SAID 1.533 ACRES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron found with cap at the north corner of this tract and said Dunlap tract in Volume 4430, Page 1136, and at most northerly west corner in Lot 5A, Resubdivision of Lot 5, T.L. Subdivision No. 1, a subdivision of record in Document No. 200200297, Official Public Records, Travis County, Texas, said Lot 5A described in a deed to Cheryl Ogle (undivided 95% interest) and Cheryl Ogle and Crystal Marie Ogle, co-trustees of the Crystal Ogle Management Trust (undivided 5% interest), of record in Document No. 2008190436, Official Public Records, Travis County, Texas, same being in the southeast line of South First Street, from which a 1/2" iron rod found with cap at the north corner of said Lot 5A and said Ogle tract bears N28°37'16"E 58.26 feet;

THENCE, with the northeast line of this tract and said Dunlap tract in Volume 4430, Page 1136, and a southwest line of said Lot 5A and said Ogle tract, **S61°19'38"E 124.79 feet** to a 1/2" iron rod found at the most northerly northeast corner of this tract and the northeast corner of said Dunlap tract in Volume 4430, Page 1136, and at an interior ell corner of said Lot 5A and said Ogle tract;

THENCE, with the southeast line of this tract, the following five (5) courses, numbered 1 through 5;

1. with the southeast line of said Dunlap tract in Volume 4430, Page 1136 and the northwest line of said Lot 5A and said Ogle and Lot 5B of said Resubdivision of Lot 5, T.L. Subdivision No. 1, said Lot 5B described in a deed to Crescent Resources, LLC, of record in Document No. 2007222585, Official Public Records, Travis County, Texas, **S28°21'07"W** (said course being the bearing basis for this survey), passing at 79.24 feet a 1/2" iron rod found at the most southerly west corner of said Lot 5A and said Ogle tract and the north corner of Lot 5B and said Crescent Resources tract, in all **173.92 feet** to a 1/2" iron rod found at the most easterly north corner of said Dunlap 0.970 acre tract and the west corner of said Lot 5B and said Crescent Resources tract, from which a 1/2" iron rod found with cap bears N31°36'34"W 0.64 feet;

2. with a northeast line of said Dunlap 0.970 acre tract and the southwest line of said Lot 5B and said Crescent Resources tract **S38°15'30"E 31.47 feet** to a spindle set at the an exterior ell corner of said Dunlap 0.970 acre tract and the north corner of Lot 1, T.L. Subdivision No. 2, a subdivision of record in Book 77, Page 312, Plat Records, Travis County, Texas, said Lot 1 described in a deed to The Bible Disclaimer Trust, Ollie M. Bible, Trustee, of record in Volume 12548, Page 362, Real Property Records, Travis County, Texas;
3. with a southeast line of said Dunlap 0.970 acre tract and the northwest line of said Lot 1 and said Bible Disclaimer Trust tract **S28°21'32"W 80.82 feet** to a 1/2" iron rod found at an interior ell corner of said Dunlap 0.970 acre tract and the most northerly west corner of said Lot 1 and said Bible Disclaimer Trust tract;
4. with a northeast line of said Dunlap 0.970 acre tract and a southwest line of said Lot 1 and said Bible Disclaimer Trust tract **S39°36'28"E 100.36 feet** to a 1/2" iron rod set with a plastic cap at the east corner of said Dunlap 0.970 acre tract and an interior ell corner of said Lot 1 and said Bible Disclaimer Trust tract; and
5. with a southeast line of said Dunlap 0.970 acre tract and a northwest line of said Lot 1 and said Bible Disclaimer Trust tract **S50°37'32"W 156.82 feet** to a spindle set at the south corner of this tract and said Dunlap 0.970 and the east corner of that tract described as 0.135 of one acre to the City of Austin, of record in Volume 1851, Page 7, Deed Records, Travis County, Texas, same being in the northeast line of West Riverside Drive;

THENCE, with the southwest line of this tract and said Dunlap 0.970 acre tract and the northeast line of said City of Austin tract and West Riverside Drive **N36°40'28"W 206.57 feet** to a spindle set at the east corner of this tract and said Dunlap 0.970 acre tract and the north corner of said City of Austin tract, same being in the northeast line of West Riverside Drive and the southeast line of South First Street;

THENCE, with the northwest line of this tract and said Dunlap 0.970 acre tract and said Dunlap tract in Volume 4430, Page 1136 and the southeast line of South First Street **N28°21'07"E 363.50 feet** to the POINT OF BEGINNING and containing 1.553 acres or 66,768 square feet, more or less, within these metes and bounds.

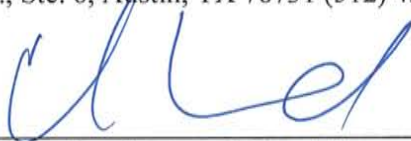
Bearing Basis Note

The bearing base for this survey is the record bearing (N28°21'07"E) along the northwest line of Lots 5A and 5B, Resubdivision of Lot 5, T.L. Subdivision No. 1, a subdivision of record in Document No. 200200297, Official Public Records, Travis County, Texas.

SURVEYED BY:

McGRAY & McGRAY LAND SURVEYORS, INC.

3301 Hancock Dr., Ste. 6, Austin, TX 78731 (512) 451-8591



05/29/2012

Chris Conrad, Reg. Professional Land Surveyor No. 5623

Date

Note: This copy of this description is not valid unless an original signature through an original seal appears on its face. There is a plat to accompany this description.

2012/Descriptions/12-022~RunTex 1.533 acres-ALTA

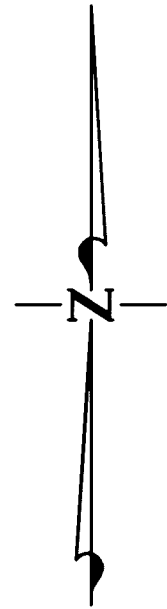
Issued 05/29/12

Re: RunTex Riverside
422 W. Riverside Drive
Austin, TX 78704

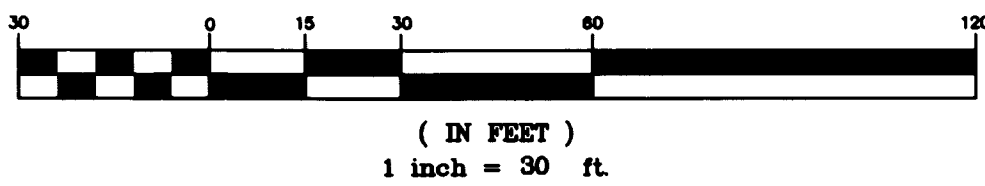
ALTA/ACSM LAND TITLE SURVEY PLAT OF
1.533 ACRES OR 66,768 SQUARE FEET
OUT OF LOT 3-F, SWISHER'S ADDITION
BOOK 1, PAGE 1,
PLAT RECORDS, TRAVIS COUNTY, TEXAS

TITLE COMMITMENT NOTE:

This survey reflects and is limited to matters of record affecting this tract as called out in First American Title Insurance Company and Heritage Title Company of Austin, Inc. GF No. 201102473 effective March 27, 2012 at 8:00 AM, Issued April 3, 2012 at 2:51 PM, by First American Title Insurance Company. Some of the specific exceptions cited on Schedule B of said Title Commitment follow:
1.) This property is subject to restrictive covenants of record in Volume 416, Page 559, Deed Records, Travis County, Texas, 10.a.) Any and all leases, recorded or unrecorded, with rights of tenants in possession, 10.b.) Easements or claims of easements, which are not recorded in the public records, 10.c.) Rights of parties in possession.



GRAPHIC SCALE



LEGEND

- 1/2" IRON ROD FOUND
- 1/2" CAPPED IRON ROD FOUND
- 1/2" IRON ROD SET WITH PLASTIC CAP "MCGRAY MCGRAY"
- SPINDLE SET
- POWER POLE
- DOWN GUY
- ELECTRIC METER
- ELECTRIC JUNCTION BOX
- WATER METER
- CLEAN OUT
- GAS METER
- GAS UTILITY MARKER SIGN
- SIGN TYPE NOTED
- LIGHT POLE / TRAFFIC SIGNAL
- EMH
- ELECTRIC MANHOLE
- WMH
- WATER MANHOLE
- STMH
- STORM SEWER MANHOLE
- WWMH
- WASTEWATER MANHOLE
- TMH
- TELEPHONE MANHOLE
- Handicap Parking
- OVERHEAD UTILITY LINE
- IRON PIPE FENCE
- CHAIN LINK FENCE
- P.O.B.
- POINT OF BEGINNING
- P.U.E.
- PUBLIC UTILITY EASEMENT
- E.E.
- ELECTRIC EASEMENT
- B.L.
- BUILDING LINE
- P.R.T.C.
- PLAT RECORDS, TRAVIS COUNTY
- D.R.T.C.
- DEED RECORDS, TRAVIS COUNTY
- O.P.R.T.C.
- OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY
- R.P.R.T.C.
- REAL PROPERTY RECORDS, TRAVIS COUNTY

RECORD INFORMATION
(XXX) VOLUME 3654, PAGE 331
{XXX} VOLUME 4430, PAGE 1136
[XXX] DOCUMENT 200200297
<XXX> BOOK 77, PAGE 312
((XXX)) VOLUME 1851, PAGE 7
[[XXX]] VOLUME 1678, PAGE 472

NOTES:

- The title commitment referenced herein refers to two tracts situated in Lot or Block 3F, Swisher's Addition, in the City of Austin, Travis County, Texas, according to the map or plat thereof, recorded in Volume 1, Page 1, and in Volume 1, Page 2 of the Plat Records of Travis County, Texas. Said tracts described by metes and bounds shown on Exhibit "A" and Exhibit "B" in said title commitment.
- According to the City of Austin the zoning classification of this tract is LI: Light Industrial Service, Neighborhood Plan.
- As per City of Austin Site Development Standards, Commercial Zoning, LI maximum building height is 60 feet.
- As per City of Austin Site Development Standards, Commercial Zoning, there is no minimum setbacks for Front Yard or Side Street for LI, however, the Interior Side Yard and Rear Yard minimum setbacks are established by Austin City Code Section 25-2-601, Sub (B) as 10 feet for LI if adjacent to property zoned as or used for a use permitted in zone LI: Lake Commercial, or less restrictive district. Zoning classification for Lots 5A and 5B, Resubdivision of Lot 5, T.L. Subdivision No. 1 is LI, and for Lot 1, T.L. Subdivision No. 2 is LI, according to the City of Austin.
- There is no visible evidence of earth moving work, building construction or building addition.
- There is no observed evidence this tract is being used as a solid waste dump, sump or sanitary landfill.
- Flood Zone AO location provided by City of Austin Watershed Department.
- There are 72 parking spaces including 1 handicap parking space.
- The building square footage shown on this survey is +/- 20 square feet.

The undersigned, being a registered surveyor of the State of Texas, certifies to (I) Alliance Realty Partners, L.L.C., its successors and assigns, (II) First American Title Insurance Company, and (III) Heritage Title Company of Austin, Inc. as follows:

- This map or plat and the Survey on which it is based were made substantially in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established by American Land Title Association and the American Congress on Surveying and Mapping in 2011, and includes items 1, 2, 3, 4, 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 10(a), 11(a), 13, 14, 16 and 18 of Table A.
- This survey was made on the ground March 12, 2012 and May 24, 2012 by me or under my supervision and correctly shows the legal description and the land area of the subject property, the location and type of all visible above ground buildings, structures and other improvements (including sidewalks, curbs, parking areas and spaces, and fences) situated on the subject property, to the best of my knowledge.
- Except as shown on the survey, there are no visible easements or rights of way of which the undersigned has been advised.
- Except as shown on the survey, there are no observable above ground encroachments (a) by the improvements on the subject property upon adjoining properties, streets, alleys easements or rights of way, or (b) by the improvements on adjoining properties, streets or alleys upon the subject property.
- The location of each easement, right of way, servitude, and other matters (above or below ground) affecting the subject property that is as listed in the Title Insurance Commitment No. 201102473, issued April 3, 2012 by First American Title Insurance Company, with respect to the subject property, has been shown or noted on the survey, together with the appropriate recording references, to the extent that such matters can be located. The property shown on the survey is the property described in the title commitment.
- The subject property has physical access to and from a duly dedicated and accepted public street or highway.

The parties listed above and their successors and assigns are entitled to rely on the survey and this certificate as being true and accurate.

SURVEYED BY: McGRAY & McGRAY LAND SURVEYORS, INC.
3301 Hancock Drive, Suite 6
Austin, Texas 78731 (512) 451-8591

05/29/2012

Chris Conrad, REG. PROFESSIONAL LAND SURVEYOR NO. 5623 DATE
Note: This copy of this plat is not valid unless an original signature through and original seal appears on its face. There is a description to accompany this plat.

FLOOD PLAIN NOTE (FOR INSURANCE PURPOSES ONLY; NOT FOR CONSTRUCTION, PERMITTING, OR OTHER USES; AN ENGINEER MUST BE CONSULTED FOR THE ACTUAL LOCATION OF THE FLOOD PLAIN): A portion of this tract lies within an identified (shaded) special flood hazard area described as Zone AO, flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined (including the 100-year flood), and within Zone X, areas determined to be outside 500 year flood plain, as identified by the Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map for Travis County, Texas, and Incorporated Areas Map No. 48453C0465H dated September 26, 2008.

The above statement is for information only and this surveyor assumes no liability for the correctness of the cited map(s). In addition, the above statement does not represent this surveyor's opinion of the probability of flooding. Registered Professional Land Surveyors in Texas are not licensed to determine flood areas.

SURVEYED BY: ISSUED: 05-29-2012

McGRAY & McGRAY
LAND SURVEYORS, INC.
3301 HANCOCK DRIVE #6
AUSTIN, TEXAS 78731
(512) 451-8591

PROJECT NUMBER: 12-047	PARTY CHIEF: J.B.	GRID H-24
DATE: 05/07/10	TECH: KS	
FIELD BOOKS: 1367/55-62		
DRAWING: M:\12-022-RUNTEX_DOWNTOWN\DWG\ALTA-ACSM_SURVEY.DWG		

S o u t h 1 s t & R i v e r s i d e D r i v e

A u s t i n - T e x a s



Conceptual Rendering
FOR DISCUSSION PURPOSES ONLY



Conceptual Rendering
FOR DISCUSSION PURPOSES ONLY

• ARCHITECTURE • LAND PLANNING • LANDSCAPE DESIGN • CONSTRUCTION ADMINISTRATION •
KELLY GROSSMAN
A R C H I T E C T S , L L C
5900 Southwest Parkway Building Four Suite 420 Austin, Texas 78736
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1st and Riverside PUD Tier 1 & Tier 2 Outline
CD-2012-0008

Tier 1 Requirements	Will this PUD meet Tier 1 Reqs?
A. Meet the objectives of the City Code	Yes.
B. Provide for development standards that achieve equal or greater consistency with the goals in Section 1.1 (General Intent) than development under the regs in the Land Development Code.	Yes.
C. Provide total amount of open space that equals or exceeds 10 percent of the residential tracts within the PUD, except that: 1. A detention or filtration area is excluded from the calculation unless it is designed and maintained as an amenity; and 2. The required percentage of open space may be reduced for urban property with characteristics that make open space infeasible if other community benefits are provided.	Yes, 15% of open space will be provided. Open Space can be counted on the ground and upper floors.
D. Comply with the City's PUD Green Building Program	Yes.
E. Be consistent with applicable neighborhood plans, and compatible with adjacent property and land uses.	Yes, the Future Land Use Map designation is Mixed Use.
F. Provide for environmental preservation and protection relating to air quality, water quality, trees, buffer zones, and greenbelt areas, CEF's, soils, waterways, topography, and natural and traditional character of the land.	Yes.
G. Provide for public facilities and services that are adequate to support the proposed development including school, fire protection, emergency service, and police facilities.	Yes, based on City of Austin record data, sufficient infrastructure exists and therefore no additional public facilities are anticipated.



1st and Riverside PUD Tier 1 & Tier 2 Outline
CD-2012-0008

H. Exceed the minimum landscaping requirements of the City Code.	Yes, larger diameter trees will be provided on-street to create a canopy and shading.
I. Provide for appropriate transportation and mass transit connections to areas adjacent to the PUD district and mitigation of adverse cumulative transportation impacts with sidewalks, trails and roadways.	Yes, a Bus Rapid Transit (BRT) stop is planned at the site.
J. Prohibit gated roadways	Yes.
K. Protect, enhance and preserve areas that include structures or sites that are of architectural, historical, archaeological, or cultural significance.	Yes.
L. Include at least 10 acres of land, unless the property is characterized by special circumstances, including unique topographic constraints.	Yes. The property is located in a densified block, including two tracts directly adjacent with structures or plans that allow 200'. The Future Land Use Map of the Neighborhood Plan identifies this property for mixed use, recognizing that this area is intended for dense use and use denser than can be accommodated in 60 feet of height given the configuration of the property resulting from the long-existing prior development of this area. The site also provides an opportunity to transition appropriately at the intersection of two core transit corridors which have 80 to 130 feet of right-of-ways and are across the street from large nearby structures – the City offices and the Long Center. The applicant's proposal seeks to extend a multi-family structure one story above the 60-foot height limit set forth in the South Shore Central Subdistrict Regulations and the only way in which this limitation can be modified is with a PUD.



1st and Riverside PUD Tier 1 & Tier 2 Outline
CD-2012-0008

Tier Two Requirements		How will this PUD meet this Tier Two Requirement?
Open Space	Provides open space at least 10% above the requirements of Section 2.3.1.A . (<i>Minimum Requirements</i>). Alternatively, within the urban roadway boundary established in Figure 2 of Subchapter E of Chapter 25-2 (<i>Design Standards and Mixed Use</i>), provide for proportional enhancements to existing or planned trails, parks, or other recreational common open space in consultation with the Director of the Parks and Recreation Dept.	15% open space is proposed which equates to 50% more open space than required for a residential use. This parcel is within the Urban Roadway boundary and is planning to provide bike lanes toward Butler Trail on Lady Bird Lake, subject to Staff approval.
Environment	Reduces impervious cover or single-family density by five percent below the maximum otherwise allowed by code or includes off-site measures that lower overall impervious cover within the same watershed by five percent below that allowed by code.	Yes, existing impervious cover is approximately 98% and proposed is 95%.
	Prohibits uses that may contribute to air or water quality pollutants.	Yes, Automotive related uses and Service Stations are prohibited.



1st and Riverside PUD Tier 1 & Tier 2 Outline
CD-2012-0008

Transportation	Provides bicycle facilities that connect to existing or planned bicycle routes or provides other multi-modal transportation features not required by code.	Yes, the applicant is working to design bike lanes along the Core Transit Corridors toward Butler Trail on Lady Bird Lake, subject to Staff approval.
Building Design	Exceeds the minimum points required by the Building Design Options of Section 3.3.2. of Chapter 25-2, Subchapter E (<i>Design Standards and Mixed Use</i>).	Yes , one point is required per the Design Standards and Mixed Use Ordinance. However, the following will be achieved equating to 7 points. One Point Options: <ul style="list-style-type: none"> • Achieve star rating under the City of Austin Greenbuilding program. • Provide façade articulation. • Provide primary entrance design. • Provide roof design. • Provide building materials meeting the standards of this section. • Improve storefronts to new regulatory standard of Section 3.2.2 for glazing type/size and shading. • 100% of glazing on ground-floor facades that face any street or parking lot have a Visible Transmittance (VT) of 0.6 or higher.
Parking Structure Frontage	In a commercial or mixed use development, at least 75 percent of the building frontage of all	Yes.



1st and Riverside PUD Tier 1 & Tier 2 Outline
CD-2012-0008

	parking structures is designed for pedestrian-oriented uses as defined in Section 25-2-691(C) (<i>Waterfront Overlay District Uses</i>) in ground floor spaces.	
Affordable Housing	Provides for affordable housing or participation in programs to achieve affordable housing.	Yes.
Community Amenities	Provides community or public amenities, which may include spaces for community meetings, day care facilities, non-profit organizations, or other uses that fulfill an identified community need.	A public plaza area will be provided at the corner of South 1 st Street and Riverside Drive. A Supplemental Zone will provide additional opportunity for community gathering space.
Community Benefit	Specific to the proposed PUD.	Applicant is discussing the establishment of an education scholarship program with Bouldin Creek Neighborhood Association.





MULTIFAMILY GUIDEBOOK

V2010_02

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Introduction

Austin Energy Green Building® (AEGB) promotes buildings that are efficient, healthy and well-constructed. AEGB's Multifamily Program provides resources to residential and mixed-use developments up to six stories above grade in the Austin Energy service area. Whether the rating is voluntary or required we promote an integrated team approach that involves AEGB staff, project architects, engineers and general contractors. The Online Tool, Guidebook, calculation tools and various other resources have been developed to facilitate the rating process and assist design teams in meeting their green building goals.



Achieving an Austin Energy Green Building Rating will confirm that your building will have:

- Lower utility bills and reduced energy and water use
- Improved indoor air quality and occupant health
- Reduced operation and maintenance costs
- Increased durability
- Lasting value and benefits for our community and planet

WHO SHOULD USE THE AEGB MULTIFAMILY RATING?

The Multifamily Rating is applicable for multifamily and mixed-use developments six stories or less in height above grade. Multifamily and mixed-use developments taller than six stories shall use the Commercial Rating. Townhouses (that meet the definition of the IRC) must use the Single-Family Home Rating. If there are multiple buildings in a development, each building must individually meet AEGB requirements and credits.

ABOUT THE ONLINE TOOL

The AEGB Multifamily Online Tool will allow you to track your progress in meeting your sustainability goals. Performance goals for multifamily and mixed-use developments are laid out according to a set of Basic Requirements required for all rated projects and additional green building measures that can be achieved to attain points for a higher rating. Points are available in the following categories: site, energy, water, indoor environmental quality, materials and resources, equity and innovation. We highly encourage design teams to select measures in all categories so that the project encompasses all attributes of a green building.

The Online Tool is used to help assess a building and award it a “star” level determined by total points achieved. One star is the entry level rating and five stars is the highest rating. All of the Basic Requirements must be met in order for a building to qualify for a rating. By fulfilling all the Basic Requirements, a project will receive a one star Rating. Additional star levels can be gained by earning points for additional green building

measures as outlined in this guide. Following are the point requirements for the star levels:

1 star	Basic Requirements
2 stars	29-35 points
3 stars	36-42 points
4 stars	43-56 points
5 stars	57 points or more

<p>\$ Rebates may be available where you see the \$ sign.</p>

Residential Uses and Non-Residential Uses

The Rating contains measures for Residential Uses, Non-Residential Uses, or if not indicated, both. “Residential” criteria are for buildings containing multifamily dwellings and their common spaces, such as hallways, leasing office, gym, or media room. “Non-residential” criteria are for mixed-use buildings, where part of the building is dedicated to non-residential uses, such as retail businesses or offices, and for those accessory buildings that do not contain multifamily dwellings such as a separate clubhouse or leasing office. For a mixed-use multifamily building with non-residential spaces, both requirements must be met. For a building serving only residential needs, then only the Residential Uses criteria should be used.

Calculators and Forms

Calculators and forms are used to help design teams demonstrate and track how some measures are being achieved. These calculators and forms are included in the Online Tool and must be completed and submitted to AEGB in order to achieve the proposed points. Calculators and forms that are included are:

- Building Water Use Reduction
- Construction Waste
- Irrigation Water Use Reduction
- Rainwater and Condensate Collection
- Building Reuse
- Building Materials (salvaged, recycled content, Texas sourced)
- Low Emitting Materials
- Certified Wood

Performance Option and Prescriptive Option Points

Some of the points in the Rating give you the option to choose between a Performance or Prescriptive path for accomplishing credits. With the Prescriptive Option you are told exactly what is required to meet that point. With the Performance Option, you choose other ways to meet the required performance measure but will need to demonstrate savings, for example using the calculators listed above, or building energy modeling. For point categories that offer Prescriptive or Performance Options, the project must meet either Prescriptive or Performance criteria, not both.

Required Verification

In each Required Verification section of the Guidebook, use the following key to determine what documentation or action is required for Conditional Approval or Final Approval:

- Needed for Conditional Approval
- Needed for Final Approval

In many cases required documentation for each measure can be uploaded and tracked within the Online Tool.

Tenant Improvement Agreements

In mixed-use developments including leased non-residential spaces that are finished-out by the tenants, a tenant lease agreement must be implemented to assure that non-residential tenants will also adhere to green building requirements. The lease should clearly identify the Star Rating to be achieved and, to the greatest extent possible, spell out all rating criteria that shall be met. For instance, if tenants install their own water fixtures, the tenant lease agreement shall list the flow rate limits they must follow in order to accomplish the desired percentage of water conserved.

A draft of the tenant lease agreement shall be submitted with the documentation for Conditional Approval. A copy of the final tenant lease agreement must be submitted as verification to Austin Energy Green Building for Final Approval. The agreement shall include the process for completing the Austin Energy Green Building Rating for each tenant space, including plan review and construction verification. AEGB Multifamily program staff can assist you in developing tenant agreement language that will meet our requirements.

ABOUT THE PROCESS AND REQUIRED SUBMITTALS

Contact AEGB as soon as you know that an Austin Energy Green Building Rating is either required or desired for your project. Early communication is essential to learn about all available options for your development so you and your team can make informed choices about design decisions. Integrated design team meetings increase the likelihood that all project team members understand the green building goals of the project.

Fee Schedule

Fees for multifamily projects will be assessed as follows:

Less than 50,000 sf: \$250 Registration fee, \$1,000 Service Fee

50,000-250,000 sf: \$250 Registration fee, \$3,500 Service Fee

Over 250,000 sf: \$250 Registration fee, \$7,000 Service Fee

SMART Housing Projects: All fees will be waived.

Site Visits

AEGB staff will conduct site visits throughout construction. At a minimum, AEGB staff will conduct an introductory site visit early in construction; to verify the integrity of all return air

plenums; and/or the installation of ductwork; and a final site visit at or near project completion.

Plenum/ductwork site visits should occur immediately before the mechanical inspection has been completed for each floor or building. **The project superintendent, or designee, is responsible for contacting their AEGB representative to schedule a quality control site visit immediately prior to both rough and final inspections on each building.**

At Your Earliest Opportunity:

- ❖ Complete the online registration process and assign team members using the Online Tool. If you have not yet identified all of the members of your team feel free to complete it later as your team is finalized. If applicable, an initial registration fee will be invoiced at this time. All current information, including any outstanding issues that need attention, can be posted in real time using the Online Tool. The project team and AEGB staff should be notified when updates are made to the project worksheet or calculators.
- ❖ When zoning or other City of Austin criteria requires an AEGB Rating, please execute and attach the AEGB Letter of Intent (LOI) using the Online Tool. **Once the project has been registered and team members assigned, we will sign and return the LOI. You will need to include the executed LOI in the project's application to Land Use Review in order to receive a Site Development Permit.**
- ❖ Throughout the project, keep AEGB up to date with the project schedule, including major deadlines, so that AEGB staff can work with the project team to assure that the green building goals are met. The project schedule can be edited using the Online Tool.

PLANNING PHASE

Early in Pre-schematic Design we request a meeting with the entire design team. This will provide an opportunity to introduce features of the AEGB Rating and Rating Process and provide an opportunity to answer any questions you may have about how it relates to your development. This meeting is a great way to set the tone for a successful project.

To complete the planning phase, provide AEGB with:

- Update the online Rating Worksheet. Acknowledge all required measures and indicate which points the team plans to pursue. Place any questions or comments in the message queue for each measure. Ensure project and team information is up to date, as well as project schedule. This will provide an opportunity to see how ideas from the planning meeting are developing.
- Sign the Letter of Intent and return it for our signature. You will need to attach the executed LOI to the project's application for a site permit, if required.
- Ensure registration fees have been paid.
- Allow at least two weeks for the team to review and approve this phase once all of the above have been completed.

DESIGN PHASE

This review is crucial to ensure green building systems, materials and goals are integrated into bid documents, providing for more accurate cost estimates and project assessment.

Upon satisfactory review that the documentation provided demonstrates how each Rating item will be achieved, AEGB will issue Conditional Approval. All documents necessary for Conditional Approval should be submitted at least four weeks prior to the planned date for receiving Conditional Approval. When zoning or other City of Austin criteria require an AEGB Rating, the **AEGB Conditional Approval letter must be attached to the front of the building permit set at the time of intake with Planning and Development Review Department.**

To complete the Design phase, provide to AEGB:

- Electronic set of permit drawings that demonstrate compliance w/each measure. Please attach the relevant drawing to the credit you are trying to pursue.
- ½ size hard-copy set of the drawings that demonstrate compliance with the Basic Requirements and other measures to be achieved.
- Project Specifications that demonstrate compliance with the Basic Requirements and other measures to be achieved, including Testing/Commissioning (Cx) specs
- Updated Online Tool Worksheet with the applicable calculators complete
- Design phase energy model if applicable
- Manual J calculations performed according to AEGB guidelines (included in this document) and according to specified parameters in construction documents
- Non-residential Uses that will be completed separately: draft tenant agreement
- Non-residential Commissioning: Owners Project Requirements
- Allow at least four weeks for the team to review and approve this phase once all of the above have been completed.

CONSTRUCTION PHASE

Pre-Construction: As you prepare for construction, update Online Tool with:

- Construction Waste Management Plan
- Testing / Commissioning (Cx) Plan
- Non-residential Commissioning: Basis of Design
- Updated project, team and schedule

The Testing/Commissioning Plan and the Construction Waste Management Plan are two imperative components of participation in the AEGB Multifamily program, therefore we require these plans are in place before construction begins. Now is the time to ensure contract documents, submittal forms, and team meetings include information that will lead to a successful green building development. Ask for Energy Star labels, recycled content, or volatile organic compounds (VOC) content, etc., as required.

During construction:

- Site visits throughout construction to verify measures selected are met.
- Rough mechanical site visit (call a day or two before city MEP rough inspection).
- Final mechanical site visit (call a day or two before city MEP final inspection).
- Continue to update Online Tool Worksheet
- Attach submittals and cut sheets to Online Tool Worksheet measures
- Monthly update of Demolition and Construction Waste Management calculator

- Updated project, team and schedule

IMPORTANT: AEGB staff will need to perform regular site visits for mechanical rough and other necessary verification. Please call us to schedule visits. The first introductory site visit should occur early in construction.

Substantial Completion: Update AEGB Online Tool project file:

- Final Online Tool Worksheet update, including all the finalized calculators and updated project and team information.
- Testing / Commissioning (Cx) Report draft including pre-functional test results (use standard testing forms available from AEGB for duct leakage testing and balancing)
- To-date Construction Waste Management report and back-up (attach pdfs to Online Tool)
- Submittals and cut sheets demonstrating each measure has been achieved attached to Online Tool.
- Ensure service fees have been paid.
- Final site visit

One or more final site visits are required. These are often done in stages as different areas of the building are completed. The first final site visit should be scheduled prior to the planned move-in date of first occupants. In order to perform the final site visit(s) and verification, service fees must be paid. An invoice is generated once the building permit set is approved.

Upon completion of site visits and satisfactory review of documentation, AEGB will issue a Final Approval. When zoning or other City of Austin criteria require an AEGB Rating, this **Final Approval is necessary to acquire a Certificate of Occupancy.**

CLOSEOUT PHASE

At Post Construction: Upload to AEGB Online Tool project file:

- Final Construction Waste Management report
- Final Commissioning (Cx) Report
- Any additional cut sheets and product specifications needed to document compliance

This will enable our team to generate your project's final Rating, and issue Rating Certificates.

COMPLETE PHASE

Once the project is complete the team will no longer be able to make any changes or add points.

If you have any questions regarding any of these deliverables, please feel free to contact your AEGB representative. We are here to help you through every step in the process.

With the exception of the ½ size set of plans, electronic submittals are preferred attached to the online tool. Any hard copy documents or CDs should be delivered to:

Austin Energy Green Building Multifamily Program: Introduction

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Disclaimer

AEGB does not make any warranty (expressed or implied) or assume any liability or responsibility, to you or any third parties for the accuracy, completeness or use of, or reliance on, any information contained in the AEGB Multifamily Guidebook and Online Tool. Any discrepancies between the AEGB Multifamily Guidebook and Online Tool are unintentional and will be resolved by AEGB. Due to the dynamic nature of websites, please bring to the attention of AEGB any referenced websites that are not functioning.

Expiration and Re-Registration for Commercial and Multifamily AEGB Rating

1. AEGB "Active" status Commercial and Multifamily Projects have been accepted by AEGB staff in the Rating System and will be considered for a rating according to requirements in the project's assigned AEGB rating version, even if AEGB releases a new AEGB rating update.
2. In order to maintain this "Active" status and the obligations under the assigned rating, the project must APPLY for a building permit within 3 years of AEGB active status date. If this does not occur, the "Active" status expires. The project must OBTAIN a building permit within 6 months of the building permit application. If this does not occur, the "Active" status expires. If the building permit for the project expires, the "Active" status expires.
3. Extensions: Project may apply for a six month extension from AEGB to extend the "Active" status period. Extension application must be submitted to AEGB prior to "Active" status expiration date.
4. Expiration and Re-Activation: In the event the project's AEGB "Active" status expires, the project must re-submit in the AEGB Rating System and re-pay fees. Project will be assigned the rating version current at the time of regaining "Active" status.

BASIC REQUIREMENTS

1. Current Regulations

Intent

A green building rated project must comply, at a minimum, with all current codes and laws associated with the built environment. Of specific interest to a green building rating is compliance with regulations regarding water quality, energy efficiency, and urban head island. These codes are in place to assure energy efficient quality buildings and protect the health and safety of building occupants, our community and the natural environment.

Requirements (*Residential and Non-Residential Uses*)

Meet current City of Austin Codes with local amendments (including energy, building, mechanical, plumbing, electrical, and current drainage and water quality standards applicable for the project site watershed).

Required Verification

- Schedule of applicable codes in Construction documents

Strategies

- ✓ Review references for possible strategies.

Resources

For Run-off: Environmental Criteria Manual – Section 1.9.0

For Water Quality: Environmental Criteria Manual – Land Development Code [LDC 25-8-211]

Land Development Code - City of Austin:

[www.amlegal.com/austin_nxt/gateway.dll?f=templates\\$fn=altmain-nf.htm\\$vid=amlegal%3Aaustin_tx\\$3.0](http://www.amlegal.com/austin_nxt/gateway.dll?f=templates$fn=altmain-nf.htm$vid=amlegal%3Aaustin_tx$3.0)

Watershed Ordinance Summary Map - City of Austin:

www.ci.austin.tx.us/watershed/ordinance_map.htm

Edwards Aquifer Recharge Zone Map:

www.tceq.state.tx.us/compliance/field_ops/eapp/mapdisclaimer.html

Drainage Criteria Manual - City of Austin:

www.amlegal.com/austin_nxt2/gateway.dll?f=templates&fn=default.htm&vid=amlegal:austin_drainage

Environmental Criteria Manual - City of Austin:

www.amlegal.com/austin_nxt2/gateway.dll?f=templates&fn=default.htm&vid=amlegal:austin_environment

Watershed Ordinances Regulations Summary Table - City of Austin:

www.ci.austin.tx.us/watershed/ordinance_table.htm

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

2. Transportation Alternatives - Bicycle Use

Intent

Reduce pollution and development impact from automobile use and improve public health by encouraging bicycle use. Ensure safety of tenants and their property.

Requirements (*Residential and Non-Residential Uses*)

Provide covered bicycle parking for 15% of residents and permanent building occupants and provide a safe path from property entrance to bike parking. Bicycle spaces shall be racks or lockers anchored so that they cannot be easily removed. Each space allocated for this kind of parking shall be a minimum of two (2) feet wide and six (6) feet long.

To Calculate Occupant Count:

* Use the method below to get a preliminary count of projected occupant totals on your projects. As the project progresses and speculative uses [ie: retailers] are known, the occupant totals can be adjusted according to the retailers actual historical or projected data. Permanent occupants = "Full Time Equivalent [FTE]". Visitors and temporary occupants = "Transient".

** Note, this occupant total is distinct from the occupant total calculated per IBC means of egress requirements [Table 1004.1.2 – IBC 2003]

For Residential Uses: [Condos or Apartments]

The number of occupants [FTE] is based on the parking counts [before reductions. i.e. Austin local CURE reductions etc]. Add up the counts based on:

LDC, Sec. 25-6-474 www.ci.austin.tx.us/development/downloads/park_require.doc

- Efficiency = 1 parking space
- One-Bedroom = 1.5 parking spaces
- Two-Bedroom = 2 parking spaces
- Three-Bedroom = 2.5 parking spaces
- Each additional bedroom = 0.5 spaces per bedroom per unit

For Commercial uses other than dwellings:

Estimate number of FTEs based on square footage and use.

Office: 250 sf per employee

Retail: 550 sf per employee

Medical: 225 sf per employee

To Calculate Bicycle Parking Spaces:

Total occupant number [FTE] x 15% = Bicycle Spaces Required

Exemptions:

- Residential units that have their own garage or are assigned a private, locked storage area are exempt.
- Projects that meet the requirements of Site Credit 11, Bicycle Storage meet this Basic Requirement.
- Senior or special needs housing projects are not exempt from this requirement, but can meet it by demonstrating how they meet the intent of this credit for

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residential uses (through a proposed combination of bicycle parking, tenant transportation services for activities such as shopping, preferred Vanpool parking, Car2Go onsite, electric vehicle use such as golf carts transportation on property, and through programs to improve public health and help tenants lead a more active lifestyle, etc).

Required Verification

- Calculations demonstrating total building occupancy and required quantity of securing areas (include in parking count schedule).
- Building and/or site plans indicating bicycle rack locations (include the capacity of each) cover device, and safe bicycle/pedestrian routes.
- Specifications of bicycle securing systems.
- Verification of installed path and bicycle securing device.

Strategies

- ✓ Estimate the number of occupants based on the number of dwelling units and number of bedrooms in each unit, as well as permanent occupants of non-residential uses in building. See calculations above.
- ✓ Place bicycle racks in locations with high foot traffic and good visibility, such as near a building entrance or gathering place.
- ✓ If the development has multiple buildings or entrances, consider placing separate racks at each location to increase convenience.

Resources

City of Austin Bicycle and Pedestrian Program including Bicycle Route Map:

www.ci.austin.tx.us/bicycle/

Bicycle Austin discusses bicycle transportation issues in Austin:

bicycleaustin.info/

Oregon Bicycle and Pedestrian Planning and Design Manual:

www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml

World of Sports article "Disabled Individuals and Regular Physical Exercise"

www.faqs.org/sports-science/Ce-Do/Disabled-Individuals-and-Regular-Physical-Exercise.html

Custom Mobility Devices for Special Needs Individuals

www.freedomconcepts.com/

3. Building Energy Performance

Intent

The Energy Code establishes minimum regulations for energy-efficient buildings. Exceeding these standards further reduces building energy consumption and load and contributes to the reduction of conventional power plant construction, greenhouse gas emissions, and utility costs.

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Requirements (*Residential and Non-residential Uses*)

Select ONE of the following options (Note: buildings with greater than 25% glazing must comply with Option B):

Option A: Meet the following prescriptive requirements:

Glazing: Maximum U value = 0.51, maximum SHGC = 0.3

Exterior Wall R-Value: R-15 +2 (wood frame) R-15+5 (steel frame). Continuous insulation required.

Lighting: 90% of indoor lamps in dwelling units, multifamily common spaces, and commercial or tenant finish out spaces must be Energy Star-compliant, high-efficacy lamps*. Outdoor luminaires that are permanently attached to a structure must be high efficacy and controlled by an integral photocell or an astronomical time clock (Exception: Lighting for covered vehicle entrances or exits from buildings or parking structures when required for safety, security, or eye adaptation. Lighting for private balconies attached to a dwelling unit must be must be Energy Star-compliant, high-efficacy lamps, but are not required to be controlled by integral photocells.) Energy Star lamps can be fitted into conventional light fixtures.

Mechanical Systems: where split mechanical systems are installed to serve dwelling units, common spaces, and non-residential spaces, these systems must be 14 SEER or inverter (e.g. mini splits) or Variable Refrigerant Volume (VRV) technology

Appliances: Energy Star refrigerator and dishwasher (installing dishwasher not mandatory).

**Lamps in closets and lighting required for safety, security or eye adaptation are excluded from the calculation.*

Option B: Use a building performance model to demonstrate that the building exceeds the applicable Austin Energy Code with Amendments. Buildings under the commercial code must save 10% of energy (kWh) compared to an ASHRAE 90.1-2007 standard reference design (SRD) building (with Austin Amendments incorporated into the SRD) using a Building Energy Hourly Simulation such as Energy Plus1, Carrier HAP1, Trane Trace1, EnergyGauge Summit1, Energy10, or eQUEST. Buildings under the residential energy code must exceed this code (with Austin Amendments incorporated into the SRD) by 7% of energy by using Building Energy Hourly Simulation such as Energy Gauge or other software capable of modeling low-rise multifamily buildings. *Buildings choosing Option B must also meet the prescriptive code minimums for the building envelope, i.e. lighting and equipment efficiency cannot be traded with envelope efficiency.* Buildings under the commercial code should perform modeling per the Performance Rating Method in ASHRAE 90.1-2007 Appendix G. Buildings under the residential code should perform modeling as per 2009 IECC Chapter 4 Table 405.5.2(1). Projects doing modeling shall also complete AEGBs Summary Data Table documenting building components incorporated into the standard reference and proposed designs. Mixed-use buildings three stories and less with portions of the building under the residential energy code, may use either the Performance Rating Method as per Appendix G for the entire building, or use the Performance Rating Method for the commercial portions and a residential software capable of modeling multifamily buildings for the residential portions of the building. These cases must submit both the residential and commercial AEGB Summary Data Table.

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Option C: Meet Energy Star 2011 National Program Requirements V2.5 or V3 Prescriptive Path. This option is only available to multifamily buildings that meet the criteria for Qualifying Units in Multiple Family Buildings and are permitted after January 1, 2011. AEGB staff shall be notified of project advancements and shall accompany RESNET raters on site visits.

Required Verification

Indicate which option is chosen in the online tool Worksheet

Option A

- Narrative describing the building envelope, systems, and energy savings measures incorporated into the building
- Plans and specifications documenting all prescriptive measures
- Cut sheets documenting prescriptive measures were incorporated into the building

Option B

- Narrative describing the building envelope, systems, and energy saving measures incorporated into building.
- Submit design energy model inputs and results recorded in the AEGB Energy Analysis Summary Form as well as modeling reports showing inputs and results for Baseline and SRD buildings. AEGB may further request the modeling files.
- Buildings under the residential energy code may perform modeling using Energy Gauge USA.
- Construction documents verifying modeling inputs
- Product specifications, cut sheets, or other documentation (e.g. NFRC stickers) documenting installed envelope materials, mechanical and lighting systems.
- Submit final energy model inputs and results recorded in the AEGB Energy Analysis Summary Form as well as modeling reports showing inputs and results for Baseline and SRD buildings. AEGB may further request the modeling files.

Option C

- Narrative describing the building envelope, systems and energy saving measures incorporated into building
- Plans and specifications documenting that Energy Star criteria are being met
- Notify AEGB staff for project meetings and site visits
- Final Energy Star rating

Strategies

- ✓ Consider modeling early in the design phase to: assess how different design options will impact the building's energy use; estimate the cost-effectiveness of energy saving measures; maximize the benefit of producing the energy model.
- ✓ We encourage projects following Option C to take advantage of AEGB staff in the design and construction process by inviting AEGB staff to design meetings and site visits in addition to required site visits with RESNET raters.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Energy Code – City of Austin

[The Code of the City of Austin](#)

Energy Star Qualified Multifamily Buildings

www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_multifamily_units

RESNET Accredited Rating Software Programs (for HERS (Energy Star) rating)

www.resnet.us/programs/energy_rating_software

Green Roof Directory:

www.greenroofs.org

Lawrence Berkley National Laboratory:

eetd.lbl.gov/HeatIsland/CoolRoofs/

National Fenestration Rating Council

www.nfrc.org/

Efficient Windows Collaborative Window Selection Tool

<http://www.efficientwindows.org/selection.cfm>

ASHRAE Article on VRV Systems

http://www.ashrae.org/doclib/20070327_goetzler.pdf

4. Residential Mechanical Systems

Intent

An efficient and right-sized air conditioner is an important part of an energy-efficient residence. Air conditioners must be sized carefully to match the cooling needs of the dwelling unit for tenant comfort, improved indoor air quality and energy savings.

Requirements (*Residential Uses*)

Systems meet ALL of the following requirements:

1. Dwellings served by split or individual systems are sized according to the Air Conditioning Contractors Association (ACCA) Manual J Residential Load Calculation Procedure and installed according to code.
2. Air conditioning system components are matched according to AHRI (Air-Conditioning, Heating and Refrigeration Institute). For equipment types that are not listed with AHRI, equipment match shall be demonstrated using a Department of Energy approved methodology.

Required Verification

- A complete and accurate Manual J for each unit type (see description below)
- Mechanical schedule demonstrating that installed systems will be sized per Manual J
- AHRI reference numbers or other documentation for equipment match
 - Final system cut sheets, AHRI reference numbers
 - Final mechanical schedule, if applicable.
 - Verification by site visit

Strategies

- ✓ Perform load calculations using the Air Conditioning Contractors of America (ACCA) approved Manual J software

Key to Required Verification

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- Needed for Final Approval

- ✓ Perform load calculations according to AEGB guidelines.
- ✓ A complete set of Manual J calculations, as well as unit plans and elevations, should be submitted at least four weeks prior to the date the project plans to receive Conditional Approval in order to accommodate edits and re-submittals.

Manual J:

Manual J is the accepted industry standard, approved by ANSI, for the proper sizing and selection of HVAC equipment in residential homes. Green Building will accept any of the tools approved by ACCA that meet Manual J standards.

AHRI:

Air conditioning equipment must be matched according to AHRI Directory of Certified Product Performance (Ahrirectory.org). The directory offers a convenient source for showing certified efficiencies and capacity ratings for the listed products. By comparing product performance ratings, the appropriate product for a particular job can be selected with the assurance that the product will perform as indicated in the directory.

The following language is from Manual J regarding right-sizing of systems:

Air Conditioning Contractors of America, Manual J, 8th ed., Introduction pp. i – iii

On undersizing heating and cooling equipment:

“The obvious problem with significantly undersized equipment is that it will not maintain the desired set-point temperature when a passing weather system imposes a design load on the heating and cooling equipment. However, slightly undersized cooling equipment – by a margin of 10% or less – may actually provide more comfort at a lower cost...”

On oversizing heating and cooling equipment:

“Excessively oversized equipment causes short-cycles, marginalizes part-load temperature control, creates pockets of stagnate air (unless the blower operates continuously), degrades humidity control during the cooling season..., requires larger duct runs, increases the installed cost, increases the operating cost, increases the installed load on the utility system and causes unnecessary stress on the machinery.”

On humidity control during the cooling season:

“Sensible and latent cooling loads are imposed on dwellings located in climates that have a substantial amount of moisture in the air during the cooling season. When the summer design condition occurs, properly sized equipment will operate continuously or almost continuously, both loads will be completely neutralized, and the occupants will be comfortable.”

“The total capacity (sensible plus latent) of the cooling equipment should not exceed the total load (sensible plus latent) by more than 15 percent for cooling-only applications and warm-climate heat pump applications...”

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On safety factors:

“Manual J calculations should be aggressive, which means that the designer should take full advantage of legitimate opportunities to minimize the size of the estimated loads. In this regard, the practice of manipulating the outdoor design temperature, not taking full credit for efficient construction features, ignoring internal and external window shading devices and then applying an arbitrary “safety factor” is indefensible.

Research studies and the experience of knowledgeable system designers indicate that aggressive use of Manual J procedures provides an adequate factor of safety. No additional safety factors are required when load estimates are based on accurate information pertaining to envelope construction and duct system efficiency.”

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- Needed for Conditional Approval
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Manual J Inputs:

City of Austin Energy Code requires calculations based on actual design, specifications and orientation and according to the Air Conditioning Contractors of America (ACCA) Manual J or equivalent computer analysis. AEGB will only accept Manual J calculations performed using tools approved by ACCA (see ACCA website www.acca.org/software). Buildings between four and six stories above grade may use a commercial load calculation program; however the inputs must meet AEGB guidelines. AEGB requires separate calculations for each unit type. Printouts showing all input and output values are required with submittals for review.

Manual J calculations must be done according to the AEGB guidelines below. Most requirements are based on ACCA's Manual J or ASHRAE *Handbook of Fundamentals*.

AEGB Multifamily Guidelines for Residential System Sizing Calculations:

- When multiple units of different orientations are present, the Manual J calculation only needs to be done for the unit with the highest gain. Typical “worst case” characteristics include: on the top floor; with the most west-facing glazing; on the southwest corner; with the most exterior walls; adjacent to unconditioned spaces like stairwells, elevators, garages, etc.).
- The exact unit that each Manual J calculation represents must be identified either on the Manual J printouts or as a separate list
- Air infiltration rates of 0.20-0.36 air changes per hour (ACH) for summer; 0.20 to 0.46 ACH for winter must be used.
- Ventilation is defined as outdoor air that is mechanically introduced into the conditioned space through the heating and cooling equipment. Exhaust fans are not considered mechanical ventilation, and the effect of these devices on the cooling/heating loads is accounted for in the infiltration above.
- Ductwork located in furrdowns or interstitial space should not have heat gain/loss in the load calculations. Only ductwork located outside the thermal envelope, such as a vented, unconditioned attic, should have a heat gain/loss associated with the ductwork.
- Indoor and outdoor design temperatures should be per Austin Amendments to the 2009 IECC (302.1 Exterior design conditions) and Manual J standards.
- Occupancy estimates should be based on ASHRAE recommendations, however up to two people per bedroom is acceptable.
- Manual J people load values must be used, i.e. 230 BTUH sensible, 200 BTUH latent per person.
- Walls separating conditioned space from interior unconditioned space, such as a garage, are specified as partition walls. Unlike exterior walls, partition walls do not have a solar load. Walls adjacent to breezeways or otherwise shaded must be input as partitions.
- Internal loads for all appliances and lighting shall not exceed 2,400 BTUH total. This load is less than the installed load in a typical apartment, but is an ASHRAE estimate of the load due to appliances which are actually operating at peak time.
- The total cooling load must be based on no less than 75% Sensible Capacity.
- The installed capacity of the cooling equipment (as specified in the mechanical schedule) must meet the sensible and latent load as calculated by the Manual J procedure **AND** shall not exceed the total load calculated by more than a half ton (5,999 BTUH).
- HVAC systems must be sized based on Manual J calculations and split systems must be matched per AHRI.

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Manual J Submittals:

In order to review Manual J calculations, reports which show all inputs and outputs must be submitted. In order to expedite the review process, the specific reports required for the two primary Manual J softwares in use are listed below.

Elite RHVAC

The figure below shows the report selection screen in RHVAC with the required reports indicated with checks in the check boxes.

Select Reports

Reports | **General** | **Title Page** | **Fonts & Colors**

General

☐ Title Page

☒ Project

☒ Miscellaneous

☐ Load Preview

☐ Custom Report

☒ AED Report

☐ Psych. Chart

Room

☒ Detailed Loads

☐ Load Summary

☐ Bar Graph

☐ Radiant Floor

Building

☐ Report

☐ Pie

☐ Bar

System

☐ Report

☐ Pie

☐ Bar

Zone

☐ Report

☐ Pie

☐ Bar

The RHVAC printouts will have the report titles listed below.

- Project Report
- Miscellaneous Report
- Adequate Exposure Diversity Test
- Detailed Room Loads
- System Summary Loads

Wrightsoft Right-J

The figure below shows the report selection screen in Right-J with the required reports shaded on the list.

Choose Reports

Choose one or more reports and click OK.

- Cost: Equipment Performance Bins
- Cost: Equipment Summary
- Cost: Investment Comparison Report
- Cost: Operating Cost Summary
- Cost: Sales Report
- Duct: System Summary
- Loads: AED Assessment**
- Loads: Building Analysis**
- Loads: Component Constructions**
- Loads: Project Summary**
- Loads: Short Room Summary
- Loads: Worksheet**
- Loop: Circulating Pump
- Loop: Details
- Loop: Field Installation
- Loop: Summary
- Quote: Parts Order
- Quote: Parts Pull Order
- Quote: Quotation
- Radiant Heating: Design Summary

The Right-J printouts will have the report titles listed below.

- AED Assessment
- Building Analysis
- Component Constructions
- Project Summary
- Right-J8 Worksheet

Resources:

Air Conditioning Contractors of America

www.Acca.org

ACCA Approved Manual J Software

www.acca.org/software/

Air-Conditioning, Heating and Refrigeration Institute

www.ahrinet.org/

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

5. Tenant Education

Intent

Increase awareness of building's green features and encourage conservation by building occupants through education to extend the life of the landfill, save energy, water and other resources.

Requirements

Notify and continually educate building tenants on recycling and green practices through a formal and ongoing educational program, including information on the building's website. A tenant guide to educate tenants shall include at minimum information on the building's green features, recycling program, alternative transportation options, pest management, pet etiquette (if pets allowed), hazardous waste disposal and green tips for conservation must be included in move-in packet information. Use double-sided print option to conserve paper or provide in electronic form (preferred).

Recycling information should provide at a minimum guidelines on what materials are and are not accepted, location of recycling, and contact information for additional questions. Permanent signage must be posted indicating the location of the recycling area.

Required Verification

- Draft description of tenant educational program and draft copy of guidebook.
- Final draft of tenant educational program and guidebook.
- Copy of any educational materials to be distributed to tenants.
- Visual verification of signage for recycling area/s.

Strategies

- ✓ The City of Austin Solid Waste Services Department may have free recycling and waste reduction educational materials to help property owners and building managers educate their tenants.

Resources

Review the Sample Tenant Guidebook Template on the Online Tool

City of Austin Recycling Ordinance:

www.ci.austin.tx.us/sws/commercial_recycling_ordinance.htm

6. Testing/Building Systems Commissioning (Cx)

Intent

The intent of the Testing/Building Systems Commissioning Basic Requirement is to ensure a comfortable and healthy environment for building occupants and minimize energy use; to reduce building operating costs by keeping mechanical and electrical building systems compliant with warranties and operating as designed; and to reduce potential for mold or other damage that can be caused by poor indoor air quality.

For the purposes of our rating, a testing requirement is applied to projects that are only using residential split systems and a commissioning requirement is applied to buildings

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using more complex mechanical systems (e.g. water source heat pumps or chillers). Buildings that are permitted under Chapter 5 (commercial chapter) of the energy code are required to undergo commissioning as per code and must also meet the AEGB testing or commissioning requirements. Projects that are undergoing the Commissioning compliance path for the AEGB Multifamily rating must also do airside testing of HVAC systems as per the testing requirement. Variable refrigerant volume and inverter systems will be treated on a case by case basis as these systems work their way into the multifamily market in Austin.

Building Commissioning is a systematic approach to improving system performance, operation & maintenance, indoor air quality & thermal comfort, and energy efficiency, resulting in improved occupant comfort, health & welfare, and productivity. Commissioning activities are not part of the typical design and construction process or part of standard operation & maintenance service contracts. Commissioning goes beyond testing, adjusting and balancing (TAB) and traditional inspections. Commissioning involves functional testing to determine how well the building systems work, and how well they work together. Commissioning is also used to determine whether the installed building equipment meets the facility's goals or whether equipment needs to be adjusted to improve the efficiency and overall performance, consistent with the Owner's Project Requirements (also known as the Design Intent).

Requirements (*Residential Systems*)

For residential spaces using split systems and non-residential spaces using residential split systems (i.e. air conditioners and air-source heat pumps 60,000 btuh or less), assure that mechanical systems are operating properly, efficiently, and according to their design intent through verification and testing that will ensure proper airflow and minimal duct leakage by meeting the AEGB Testing Requirements.

Spaces that are using mechanical systems other than residential split mechanical systems shall assure that mechanical and electrical systems are operating properly, efficiently, and according to the Owner Project Requirements (OPR) by undergoing commissioning and meeting the AEGB Commissioning Requirements.

An independent testing company hired by the owner or General Contractor (not the Mechanical Contractor) will prepare the Testing Plan and verify that mechanical systems are installed and tested to meet their design intent via the required testing below.

Split mechanical systems (ductless, VRF or inverter systems are treated on a case by case basis):

Required testing:

1. AEGB Site Visits: 100% of dwellings
2. Duct leakage testing: 25% of dwellings
3. Air balancing: 25% of dwellings
4. Static pressure: 25% of dwellings

See Installation Guidelines, AEGB Site Visit Procedures, and Testing Protocol below. Though only 25% of units must be initially tested, any recurring problems must be addressed in all other systems likely to have the same issues.

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- Needed for Conditional Approval
- Needed for Final Approval

Required Submittals:

Specification: The project specifications should include required testing. The testing requirements may also be included on the mechanical plans. Be sure to involve the testing company early and work with them to integrate testing appropriately into the construction schedule.

Testing Plan: Prior to construction, a testing plan must be submitted that narrates what testing is to be done, the criteria for acceptable performance, and the management protocols for follow-up, particularly in the event that testing demonstrates that there may be problems across all or a subset of systems. Review the Sample Testing Plan in the Online Tool.

Final Testing Report: The Final Testing Report must include testing method, common problems encountered, solutions used to meet performance criteria, problems that were not solved, and lessons learned. Field and summary data must be submitted with the Final Report. Contact your AEGB representative for template forms for reporting testing data.

Note: Projects installing ductless, inverter driven or VRF systems should work with AEGB staff to develop testing/commissioning requirements pertinent to these systems. This may include a requirement that a manufacturer's representative is onsite during installation and initial commissioning. Any systems that include an air distribution system must also comply with residential air-side testing requirements.

Requirements (*Non-Residential Systems*)

Commission Mechanical and Electrical systems:

The following documentation must be provided:

1. Cx specification included in construction documents, **including air-side testing required for residential systems (above)**
2. Owner's Project Requirements and Basis of Design documents
3. Cx Plan
4. Installation verification
5. Preliminary Cx Report including testing data

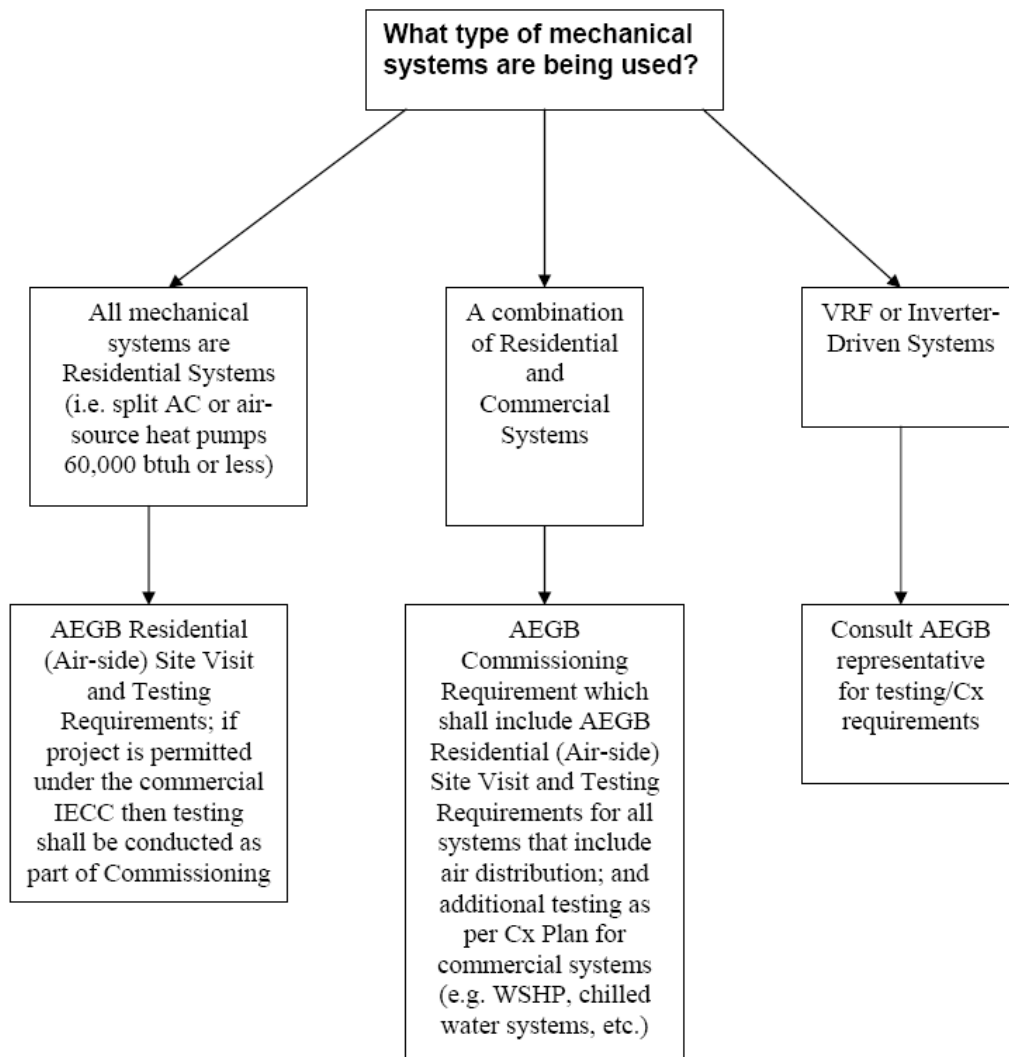
Note: Commercial building types or tenant finish outs installing split systems with 60,000 Btuh capacity or less, i.e. residential mechanical systems, may follow the AEGB site visit and testing requirements for residential systems in lieu of commissioning to meet AEGB requirements. Projects that are required to conduct commissioning as per the energy code may include the AEGB testing requirements with code commissioning.

*An independent Commissioning Authority (CxA) that meets the code definition of a CxA (Austin Amendments to IECC Section 503.2.9.2.1) AND has documented commissioning experience on at least two other building projects will verify and ensure that mechanical and electrical systems are installed and calibrated to operate according to the Owner Project Requirements (OPR) and Basis of Design (BOD).

Refer to the following flow chart if unsure what requirements the project must meet:

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval



GUIDELINES FOR AEGB TESTING REQUIREMENTS

INSTALLATION GUIDELINES FOR RESIDENTIAL SYSTEMS:

New HVAC installations will be installed as follows in addition to compliance with all applicable codes and specifications:

- a) **All gaps, joints, seams, etc. between the supply buckets and wallboard MUST BE SEALED with approved materials.**
- b) Provide return air opening of 1 square foot of net free area per ton of air conditioning. The return air system must provide enough air to maintain proper Freon pressures and supply adequate airflow to meet manufacturer's specifications.
- c) Seal all furrdown penetrations with mastic, or silicone caulk.
- d) **If return air plenums are located in a ceiling furrdown, the following guidelines apply:**

Key to Required Verification

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1. The preferred method is to construct the furrdown at least 16" deep, or such that the sidewalls of the furrdown extend at least 1-1/2" below the bottom 2" x 4" nailer.
 2. Or, you may construct the sidewalls to the typical depth (14") and install the 2" x 4" nailer flush with the bottom of the sidewalls; however, the joint between the nailer and the bottom of the wall board must be caulked along the entire perimeter of furrdown.
 3. All gaps, joints, seams, etc. between wood framing and wallboard must have an air tight seal using caulk, mastic etc. This includes "knock-outs" between two sections of the return plenum and the return grill opening if located in the sidewall of the furrdown plenum.
- e) If the air handler is in a closet, the door must be weather-stripped, with door sweep and threshold.
 - f) All seams between the air handler/furnace, the return plenum and the supply plenum must be sealed with either hard cast tape or mastic.
 - g) Using pure silicone caulk, seal the perimeter of the air handler to the platform.

AEGB SITE VISIT PROCEDURES

1. Visual Check of Mechanical Rough-ins: 100% of Dwellings

- a) AEGB will conduct regular quality control site visits. At a minimum, AEGB staff will conduct an introductory visit early in construction, site visits to verify the integrity of all return air plenums, and final site visits at or near project completion. The project may hire a third party inspector to conduct visual verification of plenums if they choose.
- b) Plenum verifications should occur immediately before the mechanical inspection has been obtained on each building. **The project superintendent, or designee, is responsible for contacting their AE Green Building Representative to schedule a visual verification immediately prior to both rough and final inspections with the city inspector on each building.**
- c) The superintendent, or designee, must walk through the units with the Green Building representative so that any problems can be addressed on the spot. The construction representative should carry necessary materials (caulk, mastic, etc.) to repair any unsealed areas of the air duct system (i.e. ducts, fan coil unit, and return air plenum).

AIR-SIDE TESTING PROTOCOL

Testing shall be done in accordance with the following local amendments to the energy code: Austin Amendments to the 2009 IECC Sections 403.2.2, 403.2.4, 403.2.6

- a) A minimum of 25% of the dwelling units in each building of a multifamily project must be tested. The dwellings selected for testing should be apportioned among unit types. If all systems in the 25% batch meet Energy Code requirements, then all of the dwelling units are considered to meet AEGB requirements. Though only 25% of units must be initially tested, any recurring problems must be addressed in all systems.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

GUIDELINES FOR AEGB COMMISSIONING REQUIREMENTS

I. Owner's Project Requirements

The Owner's Project Requirements (also known as the Design Intent) should be prepared by the Owner with assistance from the Commissioning Agent. This document should provide a narrative on what features the building will have and what needs the building needs to fill. The California Commissioning Collaborative (www.cacx.org) has a good template for the Owners Project Requirements (OPR) and Basis of Design.

II. Commissioning Specification

The specification should include the specific commissioning tasks and tests that will be conducted and who will conduct them. This could be a separate specification or the commissioning and testing specifications can be included in the mechanical and electrical specifications. The Building Commissioning Association (www.bcxa.org) has a Master Commissioning Specification provides a good model for what to include in a Commissioning Specification.

III. Basis of Design (BOD)

The Basis of Design should be prepared by design team with assistance from the commissioning agent and should include:

- Narrative on how the proper functioning of the mechanical and electrical systems relate to the OPR
- What calculations, standards, protocols, programs, etc. are used to design electrical and mechanical systems? (ex. Manual J, Manual D, Manual S, CHVAC, Trace, etc.)

IV. Commissioning Plan

The Commissioning Plan should be prepared by the Commissioning Agent and design team. This plan shall include the Commissioning Form described in the Austin Amendments to the 2009 IECC Section 503.2.9.2.2 . In addition the Commissioning Plan shall include:

- Team members
- Tasks for team members
- Periodic reviews and a schedule of planned reviews
- What will be included in the Final Report

Systems to be Commissioned

- List of systems to be commissioned
- Forms that will be used to collect data
- Forms that will be used to track deficiencies
- Percent of HVAC units will be commissioned
- The functional tests that will be performed for mechanical or electrical systems including AEGM Residential Air-Side Site Visit and Testing Requirements for systems with air distribution and Functional Performance Testing per Austin Amendments to the IECC Section 503.2.9.2.4.1 and 503.2.9.2.4.2 9 (for HVAC and lighting controls)
- Criteria for determining satisfactory performance

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- Contingency plan for addressing deficiencies
- The protocols, standards and calculations that will be used for testing and data analysis (references from BOD in addition to functional testing, duct leakage, TAB, etc.)
- Plan for training equipment contractors and installers to assure good installation and operation of HVAC and electrical equipment

Training

- How training will be implemented
- Who will be trained
- Materials that will be provided for O and M and training purposes

Appendices

- Task Matrix or Task List (including who will lead and who will be involved in each task)
- Blank Pre-functional and Functional Testing Forms
- Commissioning Checklist
- Blank Deficiency/Corrective Action Report

V. Preliminary Commissioning Report

For projects meeting the Commissioning Requirement, the Preliminary Commissioning Report shall be prepared by the Commissioning Agent with input and documentation provided by the design team and contractors. This report shall include required documentation as per Austin Amendments to the 2009 IECC Section 503.2.9.2.5. In addition, the Preliminary Commissioning Report shall include:

- Completed testing checklists and data forms
- Issues Log (produced by the CxA)
- Corrective Action Reports
- Project Schedule showing when reviews and tests were performed
- Narrative on what was done as part of the commissioning process
- Narrative on deficiencies and how they were addressed
- Narrative describing why any testing or other procedures called forth in the Cx Plan were not carried out and how this may impact meeting the Owners Project Requirements
- System Balancing Report as per Austin Amendments to the 2009 IECC Section 503.2.9.2.7.3
- Data summary tables (ex. showing exhaust fan design cfm next to measured cfm)
- System Manual per Austin Amendments to the IECC Section 503.2.9.2.7.2

<p><u>Key to Required Verification</u></p>
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- | |
|---|
| <p>○ Needed for Conditional Approval</p> <p>• Needed for Final Approval</p> |
|---|

Required Verification

Residential Systems:

- Testing Specification in construction documents
- Pre-construction Submittal: Testing Plan (Testing Plan should not be prepared by Mechanical Contractor)
- Site visits by AEGB staff or third party
- Final Testing Report including testing data

Non-Residential Systems:

- Owner's Project Requirements
- Commissioning Specification
- Preconstruction Submittal: Basis of Design and Commissioning Plan
- Site visits by AEGB or third party
- Preliminary Commissioning Report including testing data and System Manual

Strategies

- ✓ Projects meeting the Testing compliance path should be sure to review the GUIDELINES FOR AEGB TESTING REQUIREMENTS included above for details on required site visits, air-side testing, and test reporting requirements. It is highly suggested that duct test leaking be performed after ductwork is installed and before the gypsum board is installed. It is also recommended to do a mock-up unit of the HVAC installation and involve all trades. Your AEGB representative can do a site visit for the mock-up unit to help trades to understand what the representative will be looking for during site visits.
- ✓ Projects meeting the Commissioning compliance path should be sure to review both the GUIDELINES FOR AEGB TESTING REQUIREMENTS and the GUIDELINES FOR AEGB COMMISSIONING REQUIREMENTS included above for details on required site visits, air-side testing and additional functional testing, and commissioning documentation requirements.

References

ACG Commissioning Guideline (focuses on HVAC commissioning)

www.commissioning.org/commissioningguideline/

Building Commissioning Association

www.bcx.org

California Commissioning Collaborative Tools and Templates

www.cacx.org/resources/cxtools/

Commissioning Site and Functional Testing and Design Guides - Portland Energy Conservation, Inc.:

www.peci.org/ftguide/

Commissioning guidance and procurement - Energy Design Resources:

www.energydesignresources.com/category/commissioning/

Association of Certified Commissioning Authorities AABC Commissioning Group (ACG):

www.commissioning.org

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

“The Commissioning Process” ASHRAE Guideline 0-2005: ISSN 1049-894X.
National Institute of Building Sciences - Whole Building Design Guide:
www.wbdg.org/index.php

7. Building Water Use Reduction – Metering

Intent

Give residents the ability to monitor their own consumption of utilities and be rewarded for conserving behaviors on an individual basis.

Benefits

Sub-metering and charging residents for water instead of including it in rental rates results in an 18 to 39 percent drop in water use. (Source: Sub-metering, RUBS, and Water Conservation, Industrial Economics, Inc., June 1999).

Requirements (*Residential Uses*)

All dwellings are individually metered (or sub-metered) for water and are billed individually for water usage.

Required Verification

- Plumbing plans showing meter locations
- On-site verification by AEGB staff

Strategies

- ✓ It is becoming more common for multifamily residential units to have individual water meters. New, relatively inexpensive in-line metering devices are now available.

Resources

City of Austin Water Conservation Department:
www.ci.austin.tx.us/watercon/

8. Building Water Use Reduction

\$

Intent

High efficiency plumbing fixtures reduce consumption of water for indoor use thus lessening the impact on the water supply and treatment facilities as well as reducing building operating costs by saving water and associated energy use.

Requirements (*Residential Uses*)

Each dwelling includes **ALL** of the following:

1. Lavatory fixtures (max. 1.0 gpm)
2. Showerheads (max. 2.0 gpm) (no more than one showerhead installed per shower)
3. Kitchen fixtures (max. 2.2 gpm)
4. Toilets (max. 1.28 gpf)
5. Either no dishwasher installed in each unit OR Energy Star Dishwasher

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

6. Either no clothes washer is installed in each unit OR washer uses fewer than 28 gallons / regular cycle.
7. Complete the Water Use Reduction Calculator

Requirements (Non-Residential Uses)

Meet ALL of the following:

1. Public Lavatories (max. 0.5 gpm)
2. Public Showers (max. 2.0 gpm)
3. Public Kitchen fixtures (max 2.2 gpm)
4. Toilets (max. 1.28 gpf)
5. Urinals (max. 0.5 gpf)
6. Complete the Water Use Reduction Calculator

To calculate Occupant Count for the Water Use Reduction Calculator, follow the instructions in Basic Requirement #2 on page 10.

Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume of a dual flush toilet is defined as the composite, average flush volume of two reduced flushes and one full flush.

Required Verification

- Plumbing fixture specifications and water-using appliance schedule
- Calculations from the AEGB Building Water Use Reduction Calculator
- Installed fixture and water-using appliance submittals including water use
- Updated Water Use Reduction Calculator, if applicable

Strategies

- ✓ All developments can reduce indoor water usage by either installing the specified water fixtures (lavatory, showerheads and kitchen fixtures) and by installing low-water using Energy Star clothes washers.
- ✓ Low-flow plumbing fixtures including toilets, faucet aerators and showerheads as well as residential water-using appliances have been developed that save substantial amounts of water compared with conventional fixtures and appliances while providing the same utility.

References

City of Austin Water Conservation Department:

www.ci.austin.tx.us/watercon/

EPA **WaterSense** labeled High Efficiency Toilets and faucets:

www.epa.gov/watersense

9. Irrigation Water Reduction

Intent

Minimize potable water use for landscape irrigation by designing water-wise landscapes to reduce the treatment and energy used by municipal water systems, saving water and energy and lower building operating costs..

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Requirements (*Residential and Non-Residential Uses*)

Site meets **ALL** of the following requirements:

1. 90% of new plants on COA Grow Green list (Native and Adapted Landscape Plants).
2. Plant-based mulch covers non-turf planting beds to a minimum 4-inch depth.
3. Install a minimum of 6 inches of topsoil below all turf areas. If topsoil is salvaged onsite it must comply with City of Austin Standard Specification 601S, Salvaging and Placing Topsoil.

Required Verification

- Landscape design drawings, plant list and planting details
- Drawings and narrative describing the captured rainwater system or the recycled site water system with the capacity of the system highlighted (if applicable)
- On-site verification by AEGB staff

Strategies

Potable water used for irrigation can be reduced through a number of methods.

- ✓ Retain existing established plant material on a site to drastically reduce the amount of irrigation required to get new plant material healthily established in the site.
- ✓ Minimize use of manicured grass.
- ✓ Landscape design and plant material choices that are appropriate to the climate will reduce the amount of water required by depending more on the natural rain systems than the irrigation system.
- ✓ High-efficiency irrigation systems that include moisture sensors, clock times and weather database controllers are widely available. These technologies ensure that plant material is being watered only when required and eliminate the waste associated with over-watering.
- ✓ Stormwater, rainwater, and condensate collection systems can also be of use in reducing the amount of potable water used for irrigation. This water will not be potable but can be used with no or minimal further treatment for irrigation purposes.

Note: Grow Green recognizes that there are many other plants well deserving of selection and they welcome your comments and suggestions regarding any new additions and changes you think would be useful. The list is periodically updated. Please call 512-974-2446 or email them through www.growgreen.org.

Resources

Standard Specification for Salvaging and Placing Topsoil

http://www.ci.austin.tx.us/sd2/spec_detail/stdfiles/ss/601s032409.doc

Water Conservation Program provides information and assistance – City of Austin:

www.ci.austin.tx.us/watercon/

Landscaping for water quality protection - Grow Green City of Austin:

www.ci.austin.tx.us/growgreen/

The Irrigation Association:

www.irrigation.org/

Guide to Rainwater Harvesting - Texas Water Development Board:

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

www.twdb.state.tx.us/iwt/rainwater.asp

Rainwater Harvesting (including calculator) - Texas A & M:

rainwaterharvesting.tamu.edu/

Texas Evapotranspiration:

texaset.tamu.edu/

Rainwater Harvesting Information and Resources

www.dickpeterson.com

10. Low VOC Interior Paints and Coatings

Intent

Low VOC (volatile organic compound) interior paints and coatings reduce toxic pollution and contribute to good indoor air quality for the benefit of the health and productivity of building occupants and those applying the paints and coatings.

Requirements (*Residential and Non-Residential Uses*)

All paints, primers, and anti-corrosive coatings applied on-site to the building interior must not exceed the VOC limit of Green Seal Environmental Standard GS-11 as shown below. All coatings applied on-site to the building interior must not exceed the current VOC limit of SCAQMD Rule 1113. *If a specialty product does not have a low VOC option, contact your AEGB representative for approval prior to application.*

I. All paints, primers, and anti-corrosive coatings applied on-site to the building interior must not exceed the VOC limit of Green Seal Environmental Standard GS-11 Section 4.4.

Paint Type	VOC Limit (g/L)*
Non-flat Topcoat	100
Flat Topcoat	50
Primer	100
Anti-Corrosive Coating	250

* The calculation of VOC shall exclude water and colorants added at the point-of-sale.

II. Coatings applied on-site to the building interior must not exceed the current VOC limit of SCAQMD Rule 1113 for clear wood finishes, floor coatings, stains, sealers and shellacs, and all other applicable coatings.

Required Verification

- Product specifications
- Tabulation using the AEGB Low Emitting Materials Form
- Product submittals with VOC content highlighted

Strategies

- ✓ If a specialty product does not have a low VOC option, contact your AEGB representative for approval prior to application.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Green Seal GS-11, Paints and Coatings, 3rd Edition January 1, 2010:

<http://www.greenseal.org/GreenBusiness/Standards.aspx?vid=StandardCategory&cid=1>

SCAQMD Rule 1113, Coatings:

www.aqmd.gov/rules/reg/reg11/r1113.pdf

11. Filtration for Indoor Air Quality

Intent

Proper air filtration plays an important role in keeping the coils and heat exchangers clean, which helps the HVAC system to work most efficiently, as well as prolong the life of the system. Air filters also help maintain good indoor air quality resulting in improved occupant health.

Requirements (*Residential and Non-Residential Uses*)

Filters installed in ventilation systems shall have a minimum efficiency reporting value (MERV*) rating of 7 or greater.

**MERV is the industry standard rating for air filters that measures their ability to trap particles. The higher the rating, the more efficient the air filter is at trapping particles. A MERV rating of 7 will capture particles as small as 3 microns.*

Required Verification

- Product specifications
- On-site verification by AEGB staff

Strategies

- ✓ Review Resources for possible strategies.

Resources

EPA's Indoor Air Quality:

www.epa.gov/iaq/index.html

12. Moisture Prevention

Intent

Protect against building moisture infiltration through direct rainwater intrusion, water vapor transmission, and negative pressurization. Avoid potentially damaging results of condensation that may occur within an exterior wall system. Proper moisture prevention affects the health of the occupants, air conditioning costs, and building integrity and durability.

Requirements (*Residential and Non-Residential Uses*)

The site must meet ALL of the following requirements:

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

1. No vinyl wall coverings or other vapor barriers, such as fiber reinforced plastic or vinyl (FRP or FRV) may be installed as the finish material on the interior of exterior wall.
2. Tenant agreements state that no vinyl wall coverings or other vapor barriers may be installed as the finish material on the interior of any exterior wall.
3. Install building envelope drainage plane systems, including flashing and overhang systems.
4. For buildings with mechanical ventilation systems that bring in outside air, document building will be pressurized.

Required Verification

- Finish schedule indicating no vinyl wall covering on any exterior walls.
- Plans showing typical building details of building envelope drainage systems, including flashing and overhang systems, and wall sections for each exterior wall type indicating all materials.
- Mechanical schedule showing building is pressurized, if applicable.
- Photos of installed drainage plane and flashing details with location and date notes.
- Copy of tenant agreement, if applicable.
- On-site verification by AEGB staff

Strategies

- ✓ Review references for possible strategies.

References:

ASHRAE's Handbook – Fundamentals

www.ashrae.org

13. Storage and Collection of Recyclables

Intent

The collection of recyclables reduces waste generated by building occupants and building operations that is directed to the landfill, extending the life of the landfill and saving energy and resources through the recycling process.

Requirements (*Both Residential and Non-Residential Uses*)

Provide an easily accessible, well-marked area(s) that serves the entire facility, dedicated to the separation, collection, and storage of materials for recycling. A minimum of the top four identified recyclable waste stream materials must be recycled. Building loading dock or pick-up location(s) must be sized appropriately to handle the recycling material volumes generated by the building occupants. Recycling carts/containers must be labeled with the materials accepted. Permanent signage must be posted marking the recycling center/s. Tenants must be educated about the recycling program (location, materials accepted, etc.) Trash rooms must include a recycling option in the form of either a recycling shoot or recycling container/s.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Site plan indicating location of recycling collection center(s)
- On-site verification by AEGB staff of labeled recycling containers, and labeled recycling center/s.

Strategies

- ✓ Check with City of Austin Solid Waste Services for a current list of garbage and recycling providers.
- ✓ The City of Austin Solid Waste Services Department may have free educational materials to help apartment managers educate their tenants.
- ✓ Include information about the recycling program (location, materials accepted, contact information for questions, etc.) in the move-in packet.

References

City of Austin Recycling Ordinance:

www.ci.austin.tx.us/sws/recyclerules.htm

14. Construction Waste Management

Intent

Construction waste management includes recycling or salvaging construction, demolition/deconstruction, and land clearing waste to reduce the amount of waste destined for the landfill or incineration. Construction Waste Management programs extend the life of the landfill, and save energy, resources, and material costs in their reuse.

Requirement (*Residential and Non-Residential Uses*)

Recycle and/or salvage at least 50% (by weight) of non-hazardous construction and demolition waste, excluding excavated soil and stone.

To ensure you have the inputs required for the AEGB Construction Waste Calculator, weight tickets or recycling reports should list:

1. Date
2. Hauler or subcontract hauler
3. Destination (landfill or recycler)
4. Amount of each material recycled, salvaged or reused (sheetrock, wood, concrete, cardboard, plastics, etc.)
5. Amount of materials not recycled, such as rejected loads of contaminated recycling and dumpsters of garbage

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Specifications for Construction Waste Management
- Demolition Waste Management Plan submitted prior to demolition, if applicable
- Construction Waste Management Plan submitted prior to beginning construction
- Monthly CWM updates during demolition and construction using summary matrix
- Calculations from AEGB Construction Waste Calculator
- Digital copies (preferred) of weight tickets for recycling, salvage and landfill

Strategies

- ✓ Employ building materials that are highly recyclable and a construction sequence conducive to maximizing recycling. If the building site has an existing structure, design for reuse of the building or the materials on site.
- ✓ If you are considering utilizing a co-mingled construction waste recycling service provider, collect and compare the facility's diversion rates and techniques. Be aware your project's waste may be combined with that of other projects and/or a historic diversion rate for the facility may be used, which may not be your actual diversion rate. On-site separation may be preferable.
- ✓ To convert pounds to tons, one ton equals 2,000 pounds.
- ✓ The AEGB Construction Waste Calculator contains a volume to weight calculator for converting cubic yards of various materials to pounds. This is especially useful for converting land clearing vegetation mulched on site to pounds, since this material is not weighed.
- ✓ Rejected loads due to contamination must be counted as landfill waste instead of recycling even though the intention was to recycle.
- ✓ Do not include hazardous materials, i.e. lead and asbestos, or soil and stone removed from site in either total materials removed from site or recycled/landfilled total.

References

Construction and Demolition Waste Recycling – Environmental Protection Agency:

www.epa.gov/epawaste/conserve/rrr/imr/cdm/index.htm

Construction Industry Compliance Assistance Center

www.cicacenter.org

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

S I T E

Sustainability Through Site Selection

1. Site Selection

Intent

As the population of Central Texas increases two-fold in the next two to three decades, effectively manage the impact of growth through site selection for new developments and buildings that utilizes the existing municipal infrastructure and preserves our natural resources.

1.1 Environmental Sensitivity

2 points

Requirements (*Residential and Non-residential Uses*)

Project site is not in the Drinking Water Protected Zone which includes the Barton Springs Zone, Barton Creek Watershed, Edwards Aquifer Recharge and Contributing Zone, and Balcones Canyon Land. Also, project site is not a Greenfield defined as a parcel of land not previously developed beyond that of agriculture or forestry use.

Required Verification

- Print-out of the GEO Profile identifying site location and Watershed Classification from the City of Austin Development GIS Viewer. Include site address.
- Pre-construction description of site as a non-Greenfield site.

Strategies

- ✓ Avoid building on undeveloped lands and in environmentally sensitive areas.

References

Watershed Development Map GIS Viewer - City of Austin:

coagis1.ci.austin.tx.us/website/COAViewer_dev/viewer.htm

Watershed Classification Report using the GIS Viewer. First, select *Address* from the Viewer Tools menu on the left menu bar. Enter the address or street name and intersection. The Development GIS will bring up the map. To see on the map the Watershed Regulation Area, select *Austin Watershed Regulation Areas* from the Layers Menu on the right, then refresh map. Select the LEGEND tab on the right to see if the address is located in the Suburban or Urban (Site 1b) Watershed Regulation Area. To get a report of the Watershed Classification, (set browser to allow pop-ups), Select *Geo Profile* from the left menu bar and point and click to the location on the map and a GeoProfile Search Results page will open. Scroll down to page 2 to see Watershed Classification. If the SDE Waterreg. Watername is Suburban or Urban, this address qualifies for Site1a. Urban also qualifies for Site1b. BSZ, Water Rural and Water Supply Suburban do not qualify for Site1a or Site1b.

Watershed Ordinance Map - City of Austin:

www.ci.austin.tx.us/watershed/ordinance_map.htm

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

1.2 Desired Development Area

4 points

Requirements (*Residential and Non-residential Uses*)

Project site is located within the Urban Watershed Desired Development Zone.

Required Verification

- Print out of the GEO Profile identifying site location and Watershed Classification from the City of Austin Development GIS Viewer. Include site address.

Strategies

- ✓ Select a site within the Urban Watershed Desired Development zone.

References

City of Austin Development Map Viewer:

coagis1.ci.austin.tx.us/website/COAViewer_dev/viewer.htm

City of Austin Watershed Ordinance Summary Map:

www.ci.austin.tx.us/watershed/ordinance_map.htm

2. Brownfield Redevelopment

1 point

Intent

Rehabilitate sites where development is complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant as defined by CERCLA §104(k) the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to revitalize communities, utilize existing infrastructures taking development pressures off of undeveloped, open land, and improve and protect the environment.

Requirements (*Residential and Non-residential Uses*)

Project demonstrates effective remediation of site contamination (using established technologies that have minimal disruption on the site's natural features above and below ground).

Required Verification

- Documentation of the Brownfield classification and verification of remediation efforts

Strategies

- ✓ Rehabilitate and build on Brownfield sites.

References

EPA Preliminary Remediation Goals:

www.epa.gov/region09/waste/sfund/prg/index.html

EPA Sustainable Redevelopment of Brownfields Program, legal definition, grants and loans:

www.epa.gov/brownfields/

Brownfields Redevelopment Office Services – City of Austin:

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

www.ci.austin.tx.us/watershed/brownfields.htm

Brownfields Site Assessment Program – Texas Commission on Environmental Quality:

www.tceq.state.tx.us/remediation/bsa/bsa.html

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

www.epa.gov/superfund/policy/cercla.htm

3. Site Characteristics Study

1 point

Intent

Reduce the impact of the structures on the environment and optimize building placement on a site.

Requirements (*Residential and Non-residential Uses*)

Map the proposed site's environmental characteristics (include all that are applicable):

- Existing water elements
- Soil conditions
- Ecosystems and natural habitats
- Slope
- Trees and other vegetation
- Seasonal wind and daylight availability
- Traffic and other pollution sources

Create a plan to minimize disturbance and maintain or restore existing site features.

Develop recommendations for building placement on site to minimize impact on the environment and to take advantage of site characteristics.

Required Verification

- Site characteristics map should be completed prior to design development documenting all applicable elements listed in Requirements
- Narrative including recommendations for maintaining or restoring existing site features as well as for building placement to minimize environmental impact

Strategies

- ✓ Use existing site characteristics research to select the best possible building site to take advantage of features and minimize development impacts.

References

Sun Path Chart useful in passive design considerations:

solardat.uoregon.edu/SunChartProgram.html

4. Transportation Alternatives

Intent

Reduce pollution and development impact from automobile use and encourage use of alternative forms of transportation that minimize emissions and land use.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

4.1 Public Transportation

1 point

Requirements (Residential and Non-residential Uses)

Main building entrance is located within 1/4 mile of the stops for at least two Capital Metro bus lines or within 1/2 mile of a rail stop (or future rail stop with proposed completion within 5 years).

Required Verification

- Area site plan highlighting the public transportation stops. Indicate walking distance from the building's main entry to each indicated.

Strategies

- ✓ Select a site near public transportation options.

References

Austin Capital Metro Transit identifies services near a given location:

www.capmetro.org/riding/trip_info.asp

Transit Oriented Development Districts – objectives and locations:

www.ci.austin.tx.us/planning/tod/default.htm

www.ci.austin.tx.us/planning/tod/downloads/TOD_Districts.pdf

Envision Central Texas:

www.envisioncentraltexas.org

Gmaps Pedometer

www.gmap-pedometer.com

4.2 Parking Capacity

1 point

Requirements (Residential and Non-residential Uses)

Parking does not exceed minimum local zoning requirements.

TABLE OF OFF-STREET PARKING REQUIREMENT

Use Classification	Minimum Off-Street Parking Requirement
Residential Uses	Efficiency dwelling unit: 1 space 1 bedroom dwelling unit: 1.5 spaces Dwelling unit larger than 1 bedroom: 1.5 spaces plus 0.5 space for each additional bedroom
Condominium and Multifamily	

City of Austin Land Development Code Ch 25-6, Appendix A: Tables of Off-street Parking and Loading Requirements (partial listing). For non-residential and additional residential uses see Appendix A in References below. Note: Off-street parking may be subject to multipliers based on project location (central business district, for example).

Required Verification

- Schedule associated with the site plan showing the number of parking spaces required and number provided.
- Confirm number of parking spaces installed.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Strategies

- ✓ Be sure to check if any parking multipliers apply to your project based on location or investigate other opportunities available (i.e. car sharing programs, etc).

References

City of Austin Land Development Code Ch 25-6-471, Off-street parking and loading:
[www.amlegal.com/austin_nxt/gateway.dll/Texas/austin/title25landdevelopment/chapter25-6transportation?f=templates\\$fn=altmain-nf.htm\\$3.0#JD_25-6-471](http://www.amlegal.com/austin_nxt/gateway.dll/Texas/austin/title25landdevelopment/chapter25-6transportation?f=templates$fn=altmain-nf.htm$3.0#JD_25-6-471)

City of Austin Land Development Code Ch 25-6, Appendix A: Tables of Off-street Parking and Loading Requirements:

[www.amlegal.com/austin_nxt/gateway.dll?f=id\\$id=Austin%20City%20Code%3Ar%3A7670\\$cid=texas\\$t=altmain-nf.htm\\$an=JD_APPENDIXA.TABLESOFF-STREETPARKINGANDLOADINGREQUIREMENTS.\\$3.0#JD_APPENDIXA.TABLESOFF-STREETPARKINGANDLOADINGREQUIREMENTS](http://www.amlegal.com/austin_nxt/gateway.dll?f=id$id=Austin%20City%20Code%3Ar%3A7670$cid=texas$t=altmain-nf.htm$an=JD_APPENDIXA.TABLESOFF-STREETPARKINGANDLOADINGREQUIREMENTS.$3.0#JD_APPENDIXA.TABLESOFF-STREETPARKINGANDLOADINGREQUIREMENTS)

4.3 Electric Vehicle Charging Station

1 point

Intent

Prepare to meet future needs by designing an electrical infrastructure necessary to support the additional load of plug-in electric vehicles (PEV). PEV compared to gasoline fueled vehicles reduce air pollution and greenhouse gas emissions that affect human health and global warming.

Requirements

Install at least one Level 2 electric vehicle (EV) charging station(s). The EV charging station may be accessible to the general public, building occupants, and/or company fleet vehicles. Signage shall be provided.

Required Verification

- Location of the EV charging station, service panel, and conduit plan included in the plan set.
- EV Charging station specifications in construction documents.
- Narrative of scope of use.

Resources

City of Austin Design Criteria Manual – Section 4

Online Code Library - City of Austin:

[austintech.amlegal.com/nxt/gateway.dll/?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:austin_all_mc\\$anc=](http://austintech.amlegal.com/nxt/gateway.dll/?f=templates$fn=default.htm$3.0$vid=amlegal:austin_all_mc$anc=)

Definitions:

Level 2 Electric Vehicle Charging. Electric vehicle charging systems using 208 to 240 volt single phase 40-70 AMP electric circuits. Equipment configuration is compliant with the SAE J1772™ standard.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

5. Site Disturbance

1 point

Intent

Limit site disturbance or restore damaged open areas to provide habitat and promote biodiversity.

Requirements (*Residential and Non-residential Uses*)

Greenfield sites: *Site not previously developed or graded and remains in a natural state.* Plan to limit disturbance to 40 ft beyond the building perimeter; 10 ft beyond walkways, patios, and surface parking; 15 ft beyond roadways and utility trenches; and 25 ft beyond any pervious areas that require additional staging.

Previously developed sites: *Site previously contained buildings, roadways, parking lots, or was graded.*

At least 50% of the post-development open area (site area minus building footprint) is vegetated using native/adapted plants. Vegetated roof areas may be included in the open area calculations, if the plants meet the definition of native/adapted.

Required Verification

Greenfield sites:

- Site plan clearly indicating limits of construction (site disturbance boundaries) as indicated above and locations of planned development within those constraints.
- On-site verification by AEGB staff

Previously developed sites:

- Landscaping plan including plant list and open area calculations demonstrating that at least 50% is vegetated.
- On-site verification by AEGB staff

Strategies

- ✓ Choosing native plants will also help reduce outdoor water consumption.
- ✓ Clearly define limits of construction visually on site during construction.
- ✓ Consider including limits of construction in individual sub-contracts and regular site meetings. Some developments have placed a penalty for working outside the agreed upon limits.

References

City of Austin Grow Green Guide:

www.ci.austin.tx.us/growgreen/plants.htm

6. Heat Island Reduction

1 point

Intent

Urban Heat Islands are characterized by increased temperatures which affect the formation of ground-level ozone or smog, local weather patterns and the performance of air conditioning and refrigeration equipment. Heat island effects can be reduced by

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

minimizing site impervious surfaces, including vegetated open-grid pavement systems, maximizing vegetative shading, and installing high albedo roofing and other impervious surfaces. The resulting reduction in the heat island effect for the microclimate surrounding the building contributes to improved air quality and building cooling energy savings.

Requirements (*Residential and Non-residential Uses*)

Site meets ONE of the following measures:

- Vegetated open-grid pavement system (at least 50% pervious) for 50% of the non-structured parking area.
- Locate 50% of parking underground or in structured parking.
- High-albedo paving materials [Solar Reflective Index (SRI) of 29 or above] on at least 30% of non-roof impervious surfaces.
- Vegetative shading of at least 30% of non-roof impervious surfaces within five years.

TABLE S6: Solar Reflectance Index (SRI) for Standard Paving Materials

MATERIAL	Emissivity	Reflectance	SRI
Typical New Gray Concrete	0.9	0.35	35
Typical Weathered* Gray Concrete	0.9	0.20	19
Typical New White Concrete	0.9	0.7	86
Typical Weathered* White Concrete	0.9	0.4	45
New Asphalt	0.9	0.05	0
Weathered Asphalt	0.9	0.10	6
*Reflectance of surfaces can be maintained with cleaning. Typical pressure washing of cementitious materials can restore reflectance to close to original value. Weathered values are based on no cleaning.			

Source: LEED for New Construction Version 2.2, pg. 91

Required Verification

- Copy of site plan indicating method utilized at various locations and their associated areas.
- Area calculations for the entire site demonstrating that the minimum requirements are met.
- Product specifications.
- On-site verification by AEGB staff

Strategies

- ✓ Choose high-albedo paving materials that have a Solar Reflective Index (SRI) of 29 or above.
- ✓ A subsurface portion of a parking structure with ground cover may be counted as pervious cover if it meets requirements of City of Austin Land Development Code 23-1-23[b].
- ✓ Fire lanes constructed of pervious pavement are not counted as impervious cover if: the lanes are gated for fire access only and are accessible by pedestrians as a walkway, AFD approves of the structure of the driving surface, and the pervious paving detail is in the construction notes.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Design strategies and benefits to mitigating Heat Island affect:

eetd.lbl.gov/HeatIsland/

Environmental Protection Agency:

www.epa.gov/heatisland/index.html

Grow Green Guide native and adapted plant listings – City of Austin:

www.ci.austin.tx.us/growgreen/plants.htm

“Albedo: A Measure of Pavement Surface Reflectance”, American Concrete Pavement Association:

www.pavement.com/Downloads/RT/RT3.05.pdf

7. Light Pollution Reduction

1 point

Intent

Design efficient outdoor lighting systems to reduce light pollution and adverse effects of artificial light including sky glow, glare, light trespass, and light clutter to preserve nocturnal environments.

Requirements (*Residential and Non-residential Uses*)

Development site achieves BOTH:

- Exterior lighting meets the standards of the City of Austin Code – Subchapter E of Chapter 25-2: *Design Standards and Mixed Use, Article 2.5 Exterior Lighting with the exception of Section 2.5.2.C.2.*
- Exterior lighting meets the maximum initial illuminance values at the site boundary and beyond and the fixtures meet the percentage of lumens emitted above full cut-off requirements as outlined in Table 1 below for the appropriate zone as defined in IESNA RP-33. Check census data for population per square mile for the property address by census tract to determine which Lighting Zone to use.

Table 1: Light Trespass Criteria per Lighting Zone

Zone	Initial Illuminance (fc)	Calculated at Location relative to site boundary	Initial Lumens Emitted above Full Cutoff ¹
LZ1 – <200 people per square mile	0.01 horizontal & vertical	Site boundary	0%
LZ2 – 200-3,000 people per square mile	0.10 horizontal & vertical 0.01 horizontal	Site boundary 10 ft beyond site boundary	2%
LZ3 – 3001-100,000 people per square mile	0.20 horizontal & vertical 0.01 horizontal	Site boundary 15 ft beyond site boundary	5%
LZ4 – >100,000 people per square mile	0.60 horizontal & vertical 0.01 horizontal	Site boundary 15 ft beyond site boundary	10%

¹Full Cutoff is defined as an angle of 90 degrees from nadir (straight down).

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Exterior lighting levels of illuminance meet the horizontal foot candles for the facilities listed in Table 2 as defined in the City of Alpine, TX Outdoor Lighting Ordinance adopted May 23, 2000. Minimum levels shall be consistent with safety and security.

Table 2: Levels of Illuminance at Specific Facilities

Parking Lots and areas	Average 2.0 fc; minimum 0.5 fc
Entry areas near buildings	Maximum 5.0 fc

Definitions

LZ 1: Dark: For population densities less than 200 people per square mile according to the last US Census, also for development areas in state and national parks, areas near astronomical observatories, zoos, and ANY area where residents have expressed a desire to maintain a natural nighttime environment.

LZ 2: Low: For population densities of 200-3,000 people per square mile according to the last US Census, this would include most areas zoned “residential”, and is the default zone for residential areas.

LZ 3: Medium: For population densities greater than 3,000 people per square mile according to the last US Census, this lighting density is intended for high urban density neighborhoods, shopping and commercial districts and industrial parks. This is the default zone for commercial and industrial areas.

LZ 4: High: This is for major city centers (with population densities greater than 100,000 per square mile according to the last US Census), thematic attractions, entertainment districts, and major auto sale districts.

Required Verification

- Exterior lighting plan and schedule
- A narrative including specific information regarding the light trespass analysis, including census data on population per square mile
- Photometric plan showing illuminance levels at intervals no greater than 10 feet between each point across the entire site
- Product specifications
- Product submittals
- As-built exterior lighting plan, if applicable

Strategies

- ✓ Select full cut-off exterior fixtures.
- ✓ Look for opportunities to place lights under overhangs and vegetation.

References

City of Austin Code – Subchapter E of Chapter 25-2: *Design Standards and Mixed Use, Article 2.5 Exterior Lighting*:

www.ci.austin.tx.us/development/downloads/final.pdf

Census Data. From this site, enter the zip code, hit the “go” button, and then click on “map” in the Total Population line to get a population map by census tract.

<http://factfinder.census.gov/servlet/>=

International Dark-Sky Association:

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

www.darksky.org

"Lighting for Exterior Environments" - IESNA RP-33-99, Illuminating Engineering Society of North America:

www.iesna.org

Texas Light Ordinance as demonstrated in 'An Ordinance to improve outdoor lighting in the City of Alpine, Texas:

www.iessanajacinto.org/Ordinances/Alpine_5-23-05.pdf

8. Accessibility

1 point

Intent

Accessibility is an integral part of designing and constructing better buildings that serve occupants' needs over the life of the building without requiring future costly and resource-intensive renovations. Accessibility allows persons with temporary or permanent disabilities a wide range of housing options, as well as the ability to visit and mingle with neighbors, and to allow visitors easy access to the building. Accessibility reduces the need and cost for disabled persons to make requests for reasonable modifications and allows residents to "age in place" – that is, to be able to stay in their home as they grow older or as their mobility abilities change. Improved accessibility also results in improved accommodations for residents and guests who are temporarily disabled due to illness or injury.

Requirements (*Residential Uses Only*)

Site meets BOTH of the following:

- 100% of units have blocking in at least one bath wall.
- Door handle levers installed on 100% of units.
- Faucet controls at all sinks and lavatories in 100% of all units shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

The blocking for conventional bathtubs should be placed 32"-38" above the floor on the longest tub wall and should be 6" high by 24" wide. For location of blocking for conventional bathtubs and other shower/tub types, follow the Fair Housing Act design manual. Scrap pieces of wood can be used for blocking and projects are encouraged to put blocking in additional walls.

Blocking in the walls must be verified before sheetrock is installed. Grab bars do not have to be installed until resident or future resident requests installation.

Lever door handles should be installed on the interior and exterior of main entrances, as well as all bedrooms, offices, bathrooms, closets, garages and rear/patio doors (sliding doors excluded).

Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Plan notes include location of blocking.
- On-site verification of blocking and lever handles by AEGB staff.

Strategies

- ✓ Use scrap lumber for blocking in the bathroom walls if building is stick frame.
- ✓ Specify low-pile carpeting or non-slip flooring.

References

City of Austin S.M.A.R.T. Multi-Family Accessibility Standards

www.ci.austin.tx.us/ahfc/downloads/Web%20version%20SMART%20Guide%203-16-07.pdf

Americans with Disabilities Act

www.ada.gov

Fair Housing Act (FHA) design manual –

www.Huduser.org/publications/destech/fairhousing.html

Federal Disability Information Resource

www.disabilityinfo.gov

Disability Law Resource

www.dlrp.org

United States Access Board

www.access-board.gov

Institute for Human Centered Design

www.adaptiveenvironments.org/index.php?option=Content&Itemid=3

9. Outdoor Environmental Quality

1 point

Intent

Provide community-oriented, outdoor places on site to enable building occupants and visitors to connect to and enjoy the natural environment.

Requirements (*Residential and Non-residential Uses*)

Provide shaded, outdoor seating that is accessible to all building occupants for 10% or more of the building's occupants.

Required Verification

- Site plan and details indicating location of outdoor areas, seating capacities, and types of shading provided.
- On-site verification by AEGB staff

Strategies

- ✓ Review references for possible strategies.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Sun Path Chart useful in shading design:

<http://solardat.uoregon.edu/SunChartProgram.html>

10. Integrated Pest Management

1 point

Intent

Integrated pest management (IPM) is an environmentally-sound method that focuses on long-term prevention of pests in and around buildings using a least-toxic approach. The use of native and adapted plants that are naturally resistant to pests and diseases, as well as physical barriers to prevent termite infestation are a few examples of ways to control pests over the life of the building and landscape. IPM preserves the site's ecological integrity, enhances biological diversity, and protects wildlife and worker/public health and safety, and may reduce maintenance costs.

Requirements (*Residential and Non-residential Uses*)

Develop and implement an Integrated Pest Management Plan and practices appropriate for both site and building use. Plan should include two sections as outlined in memo [IPM Plan Requirements 9-4-06](http://www.ci.austin.tx.us/growgreen/downloads/ipm-plan-requirements-9-4-06.pdf), www.ci.austin.tx.us/growgreen/downloads/ipm-plan-requirements-9-4-06.pdf. The memo gives guidance on the content and format of the overall IPM plan. Part A should include a description of the project and Part B should include anticipated pest problems, pest-specific IPM Plans, and a public education program. The plan should include a system of controlling pests (weeds, diseases, insects or others) in which:

- Pests are identified
- Action thresholds are considered
- All possible control options are evaluated
- Selected control(s) are implemented
- Control options--which include biological, cultural, manual, mechanical and chemical methods--are used to prevent or remedy unacceptable pest activity or damage
- Choice of control option(s) is based on effectiveness, environmental impact, site characteristics, public health and safety, and economics

Required Verification

- Draft of the Integrated Pest Management Plan for indoor and outdoor pests
- Verify IPM plan in Operation & Maintenance (O&M) documents (where the document will be kept and who is responsible for implementing it).
- If applicable, verification of installed systems (either product submittals or site visit).
- Final copy of Integrated Pest Management Plan

Strategies

- ✓ IPM takes advantage of all appropriate pest management options.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ For a good example of handouts for tenants, staff and contractors, see the link below for the Massachusetts IPM Kit for Building Managers.

References

Integrated Pest Management Reference Plan, City of Austin:

www.ci.austin.tx.us/watershed/ipm.htm

Pest Fact Sheets for IPM of Outdoor and Indoor Pests

http://www.ci.austin.tx.us/growgreen/landscape_problems.htm

Grow Green Guide, City of Austin:

www.ci.austin.tx.us/growgreen/plantguide/searchplant.cfm

Massachusetts Integrated Pest Management Kit for Building Managers:

www.mass.gov/agr/pesticides/publications/docs/IPM_kit_for_bldg_mgrs.pdf

11. Diverse, Walkable Communities

1 point

Intent

Promote livable, walkable, and bikeable communities that encourage efficient transportation and a mix of community-oriented businesses. Promote safe pedestrian access between proposed building(s) and connections to nearby destinations.

Requirements (*Residential and Non-residential Uses*)

Building(s) connects with neighboring properties with pedestrian and/or bicycle only paths (shading is preferred) that are separate from vehicular traffic.

Project includes or is located within ½ mile walking distance of at least 10 Basic Services:

Basic Services include, but are not limited to:

1) Bank, 2) Place of Worship, 3) Convenience Grocery, 4) Daycare, 5) Cleaners, 6) Fire Station, 7) Beauty, 8) Hardware, 9) Laundry, 10) Library, 11) Medical / Dental, 12) Senior Care Facility, 13) Park, 14) Pharmacy, 15) Post Office, 16) Restaurant, 17) School, 18) Supermarket, 19) Theater, 20) Community Center, 21) Fitness Center, 22) Museum

Basic services must be accessible via a safe route explicitly intended for use by the pedestrian that does not require crossing a road more than 5 lanes wide or 35 miles per hour.

Required Documentation

- Vicinity plan with Basic Services highlighted and pedestrian path distance measured between project and each location.
- Narrative describing how a pedestrian makes the connection between the proposed building(s) and the Basic Services. Include suggested route to cross vehicular traffic and photographs of difficult to describe connections.

References

To identify basic services and distances for a given address - Walk Score™ Maps:

<http://www.walkscore.com>

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Oregon Bicycle and Pedestrian Planning and Design Manual:

www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml

City of Austin Design Standards and Mixed-Use Subchapter, Section 2.3 Connectivity:

<http://www.ci.austin.tx.us/development/downloads/final.pdf>

12. Bicycle Storage

1 point

Intent

Reduce pollution and development impact from automobile use and improve public health by encouraging bicycle use. Reduce the reliance on automobiles. Ensure high-security bicycle storage for tenants and their property.

Requirements (*Both Residential and Non-Residential Uses*)

Provide Class 1 high-security bicycle parking for 15% of residents and permanent building occupants and provide a safe path from property entrance to bike parking. Provide Class 3 bicycle parking for visitors at a rate of one parking space per 20 dwelling units, but no fewer than 4 spaces. Projects meeting this credit also meet Basic Requirement #2.

Bicycle spaces shall be racks or lockers anchored so that they cannot be easily removed. Each space allocated for this kind of parking shall be a minimum of two (2) feet wide and six (6) feet long. Bicycle parking lots shall provide 48" of clearance between rows.

As defined in the Transportation Criteria Manual:

Class I - highest security - a completely enclosed parking space which protects the bicycle from inclement weather and designed so that an unauthorized person cannot remove a bicycle from it. Examples of Class I parking include bike lockers for one or two bikes, or locked storage rooms, bike check-in systems under control of an attendant, and bike storage facilities in a parking garage under constant personal or electronic surveillance.

Required Verification

- Calculations demonstrating total building occupancy and required quantity of securing areas (include in parking count schedule).
- Building and/or site plans indicating bicycle parking locations (include the capacity of each) and safe bicycle/pedestrian routes.
- Specifications of bicycle securing systems.
- Verification of installed path and bicycle securing device.

Strategies

- ✓ Refer to Basic Requirement #2 for occupant calculations.
- ✓ Unused space in parking garages can often be used for storage rooms.
- ✓ Providing high-security bicycle parking can reduce the need for vehicle parking spaces and the need to own a vehicle.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ Constant personal or electronic surveillance must be within 100 feet of parking/storage area.

References

Link to Transportation Criteria Manual

www.amlegal.com/austin%5Ftechmanuals/

City of Austin Bicycle and Pedestrian Program including Bicycle Route Map:

www.ci.austin.tx.us/bicycle/

Bicycle Austin discusses bicycle transportation issues in Austin:

bicycleaustin.info/

Oregon Bicycle and Pedestrian Planning and Design Manual:

www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml

Bicycle Info.org

www.bicyclinginfo.org/engineering/parking.cfm

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

ENERGY

Save Energy, Use Clean Energy

1. Energy Efficient Building

1 - 12 points, \$

Intent

The energy code establishes minimum regulations for energy-efficient buildings using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and innovative techniques that conserve energy. Utilizing an energy modeling program as a design tool enables effective analysis of design strategies to maximize the cost effectiveness of efficiency strategies, lower operating costs, increase occupancy comfort and lower carbon dioxide emissions.

1.1 Energy Efficient Building Performance Option

Requirements (*Residential and Non-residential Uses*)

Buildings under the commercial code must exceed the ASHRAE 90.1-2007 Appendix G Performance Rating Method (PRM) code building by 10% or more of building energy (kWh) use. One point is earned for using a model during the design phase to meet the Basic Requirement for Energy Performance (10%). One additional point is earned for each additional 2.5% savings.

Percent Savings	10	12.5	15	17.5	20	22.5	25	27.5	30	32.5	35	37.5
Points	1	2	3	4	5	6	7	8	9	10	11	12

Buildings under the residential code may use Energy Gauge USA to demonstrate above code savings. The design building must use at least 7.0% less energy than the Standard Reference Design. One point is earned for using a model during the design phase to meet the Basic Requirement for Energy Performance (7%). One additional point is earned for each additional 2.5% savings.

Percent Savings	7	9.5	12	14.5	17	19.5	22	24.5	27	29.5	32	34.5
Points	1	2	3	4	5	6	7	8	9	10	11	12

Mixed-use buildings three stories and less with portions of the building under the residential energy code, may either use a commercial modeling program to model the entire building using an appropriate baseline, or use a commercial modeling program and the Appendix G Performance Rating Method for the commercial portions and a residential software capable of modeling multifamily buildings for the residential portions of the building. These cases must submit both the residential and commercial AEGB Summary Data Table. The awarding of points for mixed-use buildings will be done considering modeled performance and square footage of residential and commercial space.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Narrative describing the building envelope, systems, and energy saving measures incorporated into building.
- Submit design energy model inputs and results recorded in the AEGB Energy Analysis Summary Form as well as modeling reports showing inputs and results for Baseline and SRD buildings. AEGB may further request the modeling files.
- Buildings under the residential energy code may perform modeling using Energy Gauge USA.
- Construction documents verifying modeling inputs
- Product specifications, cut sheets, or other documentation (e.g. NFRC stickers) documenting installed envelope materials, mechanical and lighting systems.
- Submit final energy model inputs and results recorded in the AEGB Energy Analysis Summary Form as well as modeling reports showing inputs and results for Baseline and SRD buildings. AEGB may further request the modeling files.

Strategies

- ✓ Modeler should have a copy of ASHRAE Standard 90.1-2007 Appendix G Performance Rating Method (PRM) and become familiar with it. In addition, the User's Manual for the ASHRAE Standard 90.1-2007 is very helpful.
- ✓ Modeler should complete the AEGB Energy Analysis Summary Form and Sample Summary Form, and a Sample Energy Analysis Narrative before beginning modeling. These must be included with the modeling submittal and will help to direct model inputs
- ✓ Begin a base model as early as design allows and update it as needed.
- ✓ Use the model to determine energy and cost saving envelope, mechanical, and lighting system measures (particularly during the value engineering process).

References

Energy Code – City of Austin
[The Code of the City of Austin](#)

1.2. Energy Efficient Building Prescriptive Options a-f

1.2a. Envelope and Mechanical Systems (Energy Efficient Building – Prescriptive Option)

1-3 points

Requirements (*Residential and Non-residential Uses*)

Select one of the following options using the Roofing, Mechanical Systems and Envelope lists below:

Option A: Implement 1 item from Roofing, 2 items from Mechanical Systems and 1 item from Envelope; installed cooling systems must meet a minimum of 600 square feet per ton. (1 point)

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Option B: Implement 1 item from Roofing, 3 items from Mechanical Systems and 2 items from Envelope; installed cooling systems must meet a minimum of 650 square feet per ton. (2 points)

Option C: Implement 2 items from Roofing, 4 items from Mechanical Systems and 3 items from Envelope; installed cooling systems must meet a minimum of 700 square feet per ton. (3 points)

Roofing List

Flat or low-slope (2:12 or less):

- Total fill insulation to a minimum of R32
- Advanced framing
- Green/vegetated roof 50% minimum

Steep Slope (greater than 2:12):

- Raised heel roof truss allows for a minimum of 8" insulation at the exterior wall face OR sealed attic.
- Total fill insulation to a minimum of R32
- Advanced framing

Mechanical Systems List

- Located within the thermal envelope
- Ducts are cut to exact length, original diameter maintained, no change in direction in any single duct greater than 180 degrees and no single turn greater than 90 degrees.
- Duct systems are sized according to Manual D.
- Ductless systems are installed.
- Supply and return ductwork insulation outside the thermal envelope > R-10.
- Outdoor condensing units are 100% shaded at 10 AM and 3 PM on September 21
- Bedrooms have dedicated return air duct OR pressure relief for all bedrooms is provided by means of jump ducts, transfer grills, or ducted returns.
- Maximum length of any flex duct take-off is 10 feet.
- Cooling equipment uses inverter or variable refrigerant volume

Envelope List

- Advanced framing techniques are used
- "Total fill" insulation in exterior walls
- East and west glazing is less than 10% of façade.
- Use airtight building systems such as structural insulated panels (SIPs) or insulating concrete form (ICF).
- All south windows are shaded with overhangs – must demonstrate glazing is 100% shaded at 10 AM and 3 PM on September 21.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Construction documents clearly indicate measures to be achieved
- Manual Js demonstrating square feet per ton of air conditioning
- Narrative describing energy saving measures incorporated into building
- Product submittals
- On-site verification by AEGB staff

Strategies

- ✓ Examples of total-fill insulation are: wet-blown cellulose, BIBS, open-cell foam, cementitious foam, etc.

References

Energy Code – City of Austin

[The Code of the City of Austin](#)

Ladybird Johnson Wildflower Center Native Green Roof research:

www.wildflower.org/greenroof/

1.2b. Cooling Equipment Efficiency
Energy Efficient Building – Prescriptive Option)

1 point, \$

Requirements (*Residential and Non-residential Uses*)

Select one of the following options:

Option A: Dwellings served by split or individual systems: 15 SEER

Option B: Water-source heat pumps: 10% better than Code

Option C: Inverter or Variable Refrigerant Volume systems

Required Verification

- Specifications
- HVAC submittals indicating installed system in each unit type

1.2c. Water Heaters
(Energy Efficient Building – Prescriptive Option)

1 point, \$

Requirements (*Residential and Non-residential Uses*)

Water heater meets at least ONE of the following:

- Residential gas – minimum Energy Factor (EF): 0.63 (<50 gallon tank), 0.60 (>50 gallon tank)
- Central hot water using commercial water heaters with TE of 0.9 or greater
- Gas tankless
- Solar thermal
- Gas boilers are Energy Star labeled
- Heat pump water heater Energy Star labeled

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Specifications
- Product submittals
- On-site verification by AEGB staff

1.2d. Gas Furnaces

1 point, \$

(Energy Efficient Building – Prescriptive Option)

Requirements (*Residential and Non-residential Uses*)

Gas furnaces are Energy Star labeled. If gas is not available, heat pump is Energy Star labeled.

Required Verification

- Specifications
- Product submittals
- On-site verification by AEGB staff

1.2e. Ceiling Fans

1 point

(Energy Efficient Building – Prescriptive Option)

Requirements (*Residential and Non-residential Uses*)

Ceiling fans installed in all main rooms and bedrooms (not required in walled dining rooms/kitchens) AND are Energy Star listed.

Required Verification

- Lighting schedule with Energy Star fixtures labeled
- Specifications
- Product submittals
- On-site verification by AEGB staff

1.2f. Lighting

1 points

(Energy Efficient Building – Prescriptive Option)

Requirements (*Residential and Non-residential Uses*)

100% of all indoor lamps are Energy Star-compliant high efficacy lamps (1 points).

Required Verification

- Lighting schedule demonstrating 100% Energy Star lamps
- Product submittals
- On-site verification by AEGB staff

Strategies

- ✓ Review references for possible strategies.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Energy Code – City of Austin
[The Code of the City of Austin](#)
Energy Star
www.energystar.gov

2. Green Energy

1 point

Intent

Green Power, electricity generated from clean, renewable sources such as wind, solar, and biomass, lowers fossil fuel burning emissions which cause global warming and pollution. Purchasing green power supports the development of renewable power in Texas. Additionally, the Austin Energy GreenChoice® fixed rate rider may result in lower operating costs as fossil fuel prices fluctuate throughout the term.

Renewable Energy Certificates (RECs) support the development of the renewable power industry in Texas or nationwide.

Requirements (*Residential* and Non-residential Uses*)

Subscribe to Austin Energy GreenChoice® for 100% of building's electricity use (*dwelling units excluded).

If GreenChoice® subscriptions are not available choose one of the following RECs options:

OPTION 1: Obtain a 2-year contract for Texas RECs for 100% of the building's annual electricity use.

OPTION 2: Obtain a 2-year contract for Green-e certified National RECs for 100% of the building's annual electricity use.

The building's electricity use shall be estimated using a Building Energy Hourly Simulation and Load program OR using the electricity intensity factors per building type from the DOE Commercial Buildings Energy Consumption Survey 2003 in the table below.

Building Type	Median Electricity Intensity (kWh/sf-yr)
Food Sales	48.0
Food Service	37.4
Lodging	11.9
Retail (other than mall)	9.4
Office	11.5
Corridors of residential buildings	6.1

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Copy of the agreement with Austin Energy GreenChoice®.
- Copy of the RECs contract including name of REC vendor and value of RECs purchased (kWh) and total annual electricity consumption projection (kWh).

Strategies

- ✓ Austin Energy GreenChoice® subscriptions may sell out during the year. Contact your AEGB representative to see if subscriptions are available.

References

GreenChoice® - Austin Energy Renewable Power Program:

www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Choice/

General guide to purchasing green power and RECs – EPA & Green Power Partnership:

epa.gov/greenpower/buygp/guide.htm

Companies selling Green-e certified RECs in Texas:

www.green-e.org/

3. On-Site Renewable Energy

1 - 4 points, \$

Intent

On-site generation of energy through the use of renewable energy technologies such as solar photovoltaic (PV) panels and wind turbines for electricity production or solar thermal for hot water heating will lower operating costs and fossil fuel emissions.

Requirements (*Residential* and Non-residential Uses*)

On-site renewable energy system installed for:

Option A: 10 kW min. OR generate 25% of annual kWh usage (1 point).

Option B: 15 kW min. OR generate 50% of annual kWh usage (2 points).

Option C: 20 kW min. OR generate 75% of annual kWh usage (3 points).

Option D: >20 kW min. OR generate 90% of annual kWh usage (4 points).

*Note: Residential dwelling units excluded.

The building's electricity use shall be estimated using a Building Energy Hourly Simulation and Load program OR using the electricity intensity factors per building type from the DOE Commercial Buildings Energy Consumption Survey 2003 in the table shown above in Energy Credit 2.

PV and Solar Thermal systems must meet the performance requirements of the Austin Energy PV Solar Rebate and Solar Water Heater Programs in order to receive rebates from Austin Energy.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Indicate which option is chosen in the Strategies/Comments column of the Worksheet tab in Rating Packet.
- Construction documents and specifications of renewable energy system(s) to be installed
- Calculations indicating the annual electricity requirements and amount of energy to be generated by on-site renewable energy technology
- Product submittals
- Documentation renewable energy system(s) have been commissioned

Strategies

- ✓ Coordinate early with Austin Energy staff to assure that your project meets these requirements.
- ✓ Most participating installers (link below) will have information on federal incentives for renewable energy technologies.

References

Austin Energy PV Solar Rebate Guidelines:

www.austinenergy.com/Energy%20Efficiency/Programs/Rebates/Solar%20Rebates/guidelines.htm

Austin Energy Solar Water Heater Program Guidelines:

www.austinenergy.com/Energy%20Efficiency/Programs/Rebates/Solar%20Rebates/Solar%20Water%20Heater/index.htm

Learn about renewable energy - National Renewable Energy Laboratory:

www.nrel.gov/

4. Additional Commissioning (Cx)

1 point

Intent

The intent of Additional Commissioning is to expand the basic testing/commissioning requirement to include design review, mechanical, electrical, building structure and envelope commissioning in order to demonstrate that systems are performing to meet the Owner's Project Requirements.

Requirements (*Residential and Non-residential Uses*)

If the building only uses split systems for mechanical systems then the testing performed as part of the Basic Requirement is sufficient to meet the mechanical systems' functional testing requirements for commissioning those split systems. A Commissioning Authority (CxA) with documented commissioning experience on at least two other building projects will verify and ensure that mechanical, electrical, structural, and envelope systems are installed and calibrated to operate according to the Owner Project Requirements (OPR) and Basis of Design (BOD).

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

In order to accomplish this, all of the following are completed:

- Commissioning agent provides design review prior to 50% completion of Construction Documents
- Commissioning specifications included throughout construction documents
- Provide Owners Project Requirements, Basis of Design, and Commissioning Plan
- Demonstrate that the mechanical and electrical systems operate in accordance with the Owner's Project Requirements.
- Demonstrate building structure & envelope performance in accordance with Owner's Project Requirements.
- Provide seasonal re-commissioning throughout the warranty period.
- Submit a final commissioning report.

Required Verification

- Submit Cx design review prior to 50% CDs
- Commissioning specifications including seasonal re-commissioning
- Owner's Project Requirements
- Basis of Design
- Commissioning Plan
- Commissioning report demonstrating that the energy systems, building structure and envelope all operate according to Owner's Project Requirements
- Signed letter of certification by the commissioning authority confirming that the commissioning plan has been successfully executed and the Owner's Project Requirements have been achieved

Strategies

- ✓ Refer to the Commissioning Checklist included under the Testing/Commissioning Basic Requirement for details on what to include in the Commissioning submittals.
- ✓ The Commissioning Agent (CxA) should be brought into the design team as early as possible. The Additional Commissioning point cannot be achieved if the CxA does not perform a design review prior to 50% CDs.

References

Building Commissioning Association

www.bcx.org

California Commissioning Collaborative Tools and Templates

www.cacx.org/resources/cxtools/

Commissioning Site and Functional Testing and Design Guides - Portland Energy Conservation, Inc.:

www.peci.org/ftguide/

Commissioning guidance and procurement - Energy Design Resources:

www.energydesignresources.com/category/commissioning/

"The Commissioning Process" ASHRAE Guideline 0-2005: ISSN 1049-894X.

National Institute of Building Sciences - Whole Building Design Guide:

www.wbdg.org/index.php

Envelope Commissioning

www.closerlookinspection.com/envelope.htm

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Envelope Commissioning: Proceedings from 2005 National Conference on Building Commissioning, see reports by Tseng and Turner
www.peci.org/ncbc/proceedings/2005/

5. District Cooling

1 point

Intent

A district cooling plant distributes chilled water from a central plant to individual buildings through a network of underground pipes. A single district cooling plant can satisfy the cooling needs of several buildings and customers.

Austin Energy chilled water plants may use a combination of thermal storage, heat recovery driven absorption chillers, and high efficiency electric chillers to reduce electric consumption and peak demand. District cooling contributes to the reduction of conventional power plant construction, associated greenhouse emissions, and building operating costs.

Requirements (*Residential and Non-residential Uses*)

Tie into an Austin Energy district cooling loop.

Required Verification

- Drawings demonstrating the tie from the building into an Austin Energy district cooling loop
- Copy of signed contract with Austin Energy District Cooling
- On-site verification by AEGB staff

Strategies

- ✓ Contact Austin Energy District Cooling early (email below) for assistance in determining how district cooling can meet your chilled water needs.
- ✓ Any building within a few blocks of an existing chilled water plant should consider district cooling.

Benefits

Operational benefits of district cooling are proven reliability, convenience, simplicity and risk mitigation. Building costs are reduced initially by substantially reducing the capital investment for cooling systems. Throughout the life of the building the use of district cooling offers lower operational and energy expenses for the entire facility and stable, predictable cooling costs over the long term which will increase the net operating income. In addition, the use of district cooling will conserve space by eliminating the need for a chiller plant, reduce noise and potential environmental hazards, and improve facility comfort.

References

Austin Energy District Energy Services, On-Site Energy Resources:

www.austenergy.com/Commercial/Other%20Services/On-Site%20Energy%20Systems/districtcooling.htm

E-mail: Sue.Arthur@austenergy.com

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

6. High Efficiency Clothes Washers

2 point

Intent

Energy Star appliances use less energy, save money and help protect the environment. Energy efficient choices can save families about a third on their energy bills, with similar savings of greenhouse gas emissions, without sacrificing features, style or comfort.

Requirements (Residential and Non-residential Uses)

Choose ONE of the following options:

Option A: Energy Star Labeled Clothes Washers

Install clothes washers in every dwelling unit that are Energy Star labeled and included on the City of Austin Water Conservation WashWise list (see links in References section below).

Option B: Central Laundry

Central laundry equipment is Energy Star labeled and listed on the City of Austin's Water Conservation Multifamily Rebate program for coin-operated equipment.

Required Verification

- Product specifications documenting that clothes washers are to be Energy Star labeled and included on the City of Austin Water Conservation WashWise list for single-family or multifamily clothes washer rebates.
- Plans showing location of central laundry facility, for Option B.
- Product submittals with Energy Star label highlighted
- WashWise list with installed model highlighted
- Onsite verification washers are installed.

Strategies

- ✓ The Washwise list is updated on a regular basis. Old versions of the list are not available to staff, so print and save the list when you have made your selection.

References

Energy Star

www.energystar.gov

Single-family Clothes Washer Rebates

www.cityofaustin.org/watercon/sfwasher.htm

Multifamily Clothes Washer Rebates

www.cityofaustin.org/watercon/mfwasher.htm

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

W A T E R

Better Water Quality, Water Conservation, Rainwater Catchment

1. Irrigation Water Minimization

1 - 3 points

Intent

Minimize potable water use for landscape irrigation by designing WaterWise landscapes, using drip irrigation and “smart” technology irrigation systems, and utilizing rainwater catchment systems will reduce the load on municipal water systems saving water, energy, and lower building operating costs.

Requirements (*Residential and Non-residential Uses*)

Do not include plants listed on the City of Austin Grow Green “Invasive Plants to Avoid” list **AND**

Option A: Reduce irrigation potable water consumption by at least 50% of total water required for irrigation over baseline (1 point).

Option B: Reduce outdoor potable water consumption by at least 75% of total water required for irrigation over baseline (2 points).

Option C: Reduce outdoor potable water consumption by 100% of total water required for irrigation over baseline (3 points).

Baseline Assumptions: You should assume average species, density and microclimate factors in your baseline for the “average” landscape. You can assume 30% tree canopy in the baseline.

Required Verification

- Indicate which option is chosen in the Strategies/Comments column of the Worksheet tab in Rating Packet.
- Drawings indicating plant selection and location and irrigation system
- Drawings and narrative describing the rainwater harvesting system or recycled site water system with the capacity of the system highlighted, if applicable
- Draft calculations from the AEGB Irrigation Calculator.
- Updated AEGB Irrigation Calculator
- On-site verification of installed plants, irrigation, and catchment systems by AEGB staff
- OR
- For Option C, design narrative of the landscape design and describe why a permanent landscape irrigation system is not necessary.

Strategies

- ✓ Potable water use reductions may be based on landscaped area, vegetation species factor water usage (low, medium, high), density factor (low, medium, high), and/or irrigation technology (drip, sprinkler, other) efficiency. Use the Irrigation Water Calculator to determine % reduction.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ Retaining existing established plant material on a site will drastically reduce the amount of irrigation required to get new plant material healthily established in the site.
- ✓ Minimizing use of manicured grass.
- ✓ Landscape design and plant material choices that are appropriate to the climate will reduce the amount of water required by depending more on the natural rain cycles than the irrigation system.
- ✓ High-efficiency irrigation systems that include moisture sensors, clock timers and weather data-base controllers are widely available. These “smart” technologies ensure that plant material is being watered only when required and eliminate the waste associated with over-watering.
- ✓ Rainwater and greywater systems can be used to recover stormwater from roof and impervious site surfaces as well as water from building waste water. This water will not be potable but can be used with no or minimal further treatment for irrigation purposes.

References

Water Conservation Program provides information and assistance – City of Austin:

www.ci.austin.tx.us/watercon/

Landscaping for water quality protection – Grow Green City of Austin:

www.ci.austin.tx.us/growgreen/

The Irrigation Association:

www.irrigation.org/

Guide to Rainwater Harvesting - Texas Water Development Board:

www.twdb.state.tx.us/iwt/rainwater.asp

Rainwater Harvesting (including calculator) - Texas A & M:

rainwaterharvesting.tamu.edu/

Texas Evapotranspiration:

texaset.tamu.edu/

Texas Commission on Environmental Quality: Use of Graywater Systems:

www.tceq.state.tx.us/assets/public/legal/rules/rules/pdflib/210f.pdf

Rainwater Harvesting Fact Sheet – Austin Energy Green Building

www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Building/Resources/Fact%20Sheets/rainwaterHarvesting.pdf

2. Indoor Potable Water Use Reduction

1- 4 points

Intent

High efficiency plumbing fixtures reduce consumption of water for indoor use thus lessening the impact on the water supply and treatment facilities and reducing building operating costs by saving water and associated energy use.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Requirements (*Residential and Non-Residential Uses*)

Option A: Reduce planned indoor potable water consumption below the baseline by 20% (1 point).

Option B: Reduce planned indoor potable water consumption below the baseline by 25% (2 points).

Option C: Reduce planned indoor potable water consumption below the baseline by 30% (3 points).

Option D: Reduce planned indoor potable water consumption below the baseline by 35% (4 points).

The volume and flow rates for standard plumbing fixtures used to establish the baseline are set by the current ASME/ANSI Standards and City of Austin Ordinance No. 20071018-086 Section 411.3.1 and City of Austin Ordinance No. 20051215-108.

To calculate Occupant Count for the Water Use Reduction Calculator, follow the instructions in Basic Requirement #2 on page 10.

Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume of a dual flush toilet is defined as the composite, average flush volume of two reduced flushes and one full flush.

Required Verification

- Draft of AEGB Building Water Use Reduction Calculator
- Plumbing fixtures schedule specifying flush and flow rates or specifications or flow limits in specifications
- Updated AEGB Building Water Use Reduction Calculator
- Plumbing fixture submittals with flush and flow rates highlighted for all water-using fixtures and appliances installed onsite
- On-site verification by AEGB staff

Strategies

- ✓ Faucet aerators or flow restrictors can be used to further decrease water consumption.
- ✓ Rainwater and condensate collection systems can also be of use in reducing the amount of potable water used.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

TYPES OF WATER SAVING FIXTURES				
TOILETS	URINALS	SINKS AND LAVATORIES	SHOWERS	APPLIANCES
Power-Assisted Low Flush	Waterless	Low-Flow Faucets	Low-Flow Showerheads	Clothes Washers
Dual Flush	Pint Flush	Electronic Sensor Faucets		Dishwashers
Power-Assisted Dual Flush	Low Flush			
Composting Toilets				

References

Toilet listings and rainwater harvesting - City of Austin Water Conservation:

www.ci.austin.tx.us/watercon/

Energy Star Appliances:

www.energystar.gov/index.cfm?c=appliances.pr_appliances

EPA **WaterSense** labeled High Efficiency Toilets and Faucets:

www.epa.gov/watersense

Texas Guide to Rainwater Harvesting:

www.twdb.state.tx.us/iwt/rainwater.asp

3. Central Laundry

2 point, \$

Intent

Decrease demand for water and electricity or gas by providing centralized laundry facilities. Residents with in-unit washers do many more, smaller and less-efficient loads of laundry than residents utilizing a common-area laundry facility. In-unit laundry washers use 3.3 times more water while electricity usage of in-unit applications is close to 5 times higher compared to common-area laundry rooms and gas usage is 5.2 times higher. (Source: 2002 Study: A National Study of Water and Energy Consumption in Multifamily Housing).

Requirements (*Residential and Non-residential Uses*)

The development does not include clothes washer hook-ups in dwellings.

Required Verification

- Plans showing dwellings without laundry hook-ups and, if applicable, location of centralized laundry facility
- On-site verification by AEGB staff

Strategies

- ✓ If central laundry facilities are planned, check to see which washers are available for a rebate from the City of Austin.
- ✓ Reference credit Energy 6.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Multifamily Clothes Washer Rebates

www.cityofaustin.org/watercon/mfwasher.htm

Laundrywise Website

www.laundrywise.com/

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

INDOOR ENVIRONMENTAL QUALITY

Better indoor environmental quality, humidity control, comfort

1. Indoor Air Quality Monitoring

1 point

Intent

Monitor indoor air quality to maintain adequate volume of fresh air within a building by measuring the carbon dioxide concentrations for the health and productivity of the occupants.

Requirements (*Non-residential Uses*)

Install permanent carbon dioxide monitoring system interlocked with the ventilation system that provides feedback in a useable form to make adjustments for ventilation system.

Commission all systems to the preferred set point parameters and optimal performance for all operating conditions.

Required Verification

- Drawings and narratives describing the preferred set point parameters and optimal performance requirements of the monitoring and control system.
- Monitoring and control system specifications
- Cut sheets
- Documentation of the commissioning efforts associated with the monitoring and control system

Strategies

- ✓ Review references for possible strategies.

References

Indoor Air Quality guidance tools - EPA:

www.epa.gov/iaq/index.html

2. Indoor Chemical & Pollutant Sources

1 point

Intent

Minimize indoor pollutants generated by certain types of equipment and chemical use inside a building that affect the health, comfort, and performance of occupants.

Requirements (*Residential* and Non-residential Uses*)

Identify and isolate pollution point sources which may include: copy rooms, print shops, janitorial closets/rooms, laboratories, chemical storage, etc. *Dwelling units are excluded. (Complete all below)

- Provide ventilation directly to the outside of the building.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- Between these areas and occupied spaces construct a full height deck to deck partition or construct a hard lid ceiling enclosure.
- Operate at a negative pressure relative to surrounding areas under all operating conditions.

Required Verification

- Plans locating copy rooms, print shops, laboratories, and janitorial chemical storage rooms.
- Details and partition schedule indicating types of full height partitions used.
- Mechanical and plumbing construction documents demonstrating ventilation, drainage and pressure requirements.
- On-site verification of installed partitions and ventilation / drainage systems.

Strategies

- ✓ Review references for possible strategies.

References

Indoor Air Quality in Large Buildings guidance tool - EPA:

www.epa.gov/iaq/largebldgs/i-beam/index.html

Office Equipment: Design, Indoor Air Emissions, and Pollution Prevention Opportunities - EPA:

www.p2pays.org/ref/07/06260.pdf

3. Daylighting

1 point

Intent

Integrate effective daylighting systems, electric lighting systems and controls to optimize daylighting strategies and minimize energy consumption and heat generation.

Requirements (*Residential* and Non-residential Uses*)

Provide adequate daylighting which minimize glare and integrate daylighting systems with electric lighting systems and controls. *Dwelling units are excluded.

Required Verification

- Lighting plan and sections showing daylighting penetration and electrical controls and photoelectric sensors.
- A narrative highlighting the methods used to provide sufficient daylighting for the task, shading strategies, depth of daylight, quality and quantity of daylight, surface colors, and contrast ratio < 4:1, percentage of building day lit, and orientation.
- Include in the specifications the requirement for calibration of controls and calibration logs to be submitted by the contractor and verified by the Commissioning Authority.
- Documentation that the daylighting systems, lighting and controls, have been commissioned.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Strategies

- ✓ Involve a commissioning agent early in planning.
- ✓ Include in the specifications the requirement for calibration of controls and calibration logs to be submitted by the contractor.
- ✓ Include daylighting systems in the commissioning plan.
- ✓ Consider wiring light fixtures (along the building perimeter) independently of the others in a space so they can be switched off when daylight is adequate.

References

Daylighting design guide - U.S. Department of Energy EERE:

www1.eere.energy.gov/buildings/commercial/lighting.html

Daylighting - Whole Building Design Guide:

www.wbdg.org/resources/daylighting.php

Electric Lighting Controls - Whole Building Design Guide:

www.wbdg.org/resources/electriclighting.php

4. Views to Outside

1 point

Intent

Create a connection between the indoor and outdoor environments by providing visual access to windows from regularly occupied spaces.

Requirements (*Residential and Non-residential Uses*)

Glazing systems and interior partitions allow for a minimum of 75% of regularly occupied spaces a view of vision glazing (between 2'-6" and 7'-6" from finished floor height) and a view of the outdoors.

Required Verification

- Window schedule and building elevations
- Plans and sections demonstrating the lines of site from within the building to the vision glazing.
- Submit a view calculation indicating that areas with uninterrupted views to the outside encompass 75% of regularly occupied space (not including copy rooms, storage areas, mechanical, laundry, bathrooms and other support areas).

Strategies

- ✓ Review references for possible strategies.

References

US Green Building Council, LEED-NC v2.2 Reference Guide, Environmental Quality Credit 8.1, Daylight and Views

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

5. Thermal Comfort

1 point

Intent

Provide an environment that controls temperature, humidity and air movement for the comfort and performance of the occupants.

Requirements (*Residential and Non-residential Uses*)

Install mechanical systems (thermal, ventilation, and dehumidification) and controls to provide thermal comfort for all operating conditions according to ASHRAE 55-2004.

Required Verification

- Documentation from the mechanical engineer addressing the Owner Project Requirements for thermal comfort including components described in ASHRAE 55-2004 Section 6.1.1 in the Basis of Design and supporting documentation.
- Documentation of commissioning efforts for components of thermal, ventilation, dehumidification and monitoring systems.

Strategies

- ✓ Review references for possible strategies.

References

ASHRAE 55-2004 *Thermal Environmental Conditions for Human Occupancy*:

www.ashrae.org/

6. Low-Emitting Materials

Intent

Low-emitting building materials reduce toxic pollution and waste thus conserving natural resources and habitats and minimizing global warming and ozone depletion. In addition, they contribute to good indoor air quality, benefiting the health and productivity of building occupants.

6.1 Sealants and Adhesives

1 point

Requirements (*Residential and Non-residential Uses*)

All sealants and adhesives applied on-site to building interior meet South Coast Air Quality Management District (SCAQMD) standards Rule 1168. For spray adhesives, meet the Green Seal standard for Commercial Adhesives GS-36. *If a specialty product does not have a low VOC option, contact your AEGB representative for approval prior to application.*

Note: If products are Green Guard certified they meet this credit.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Specifications for all sealants and adhesives, including volatile organic compound (VOC) limits
- Cut sheet and MSDS sheet for each sealant and adhesive with VOC content highlighted
- Tabulation using the AEGB Low Emitting Materials Form

Strategies

- ✓ Clearly identify VOC limits for specific sealants and adhesives in each applicable specification section.
- ✓ Specifications and General Contractor should require VOC content to be highlighted on submittals for all sealants and adhesives

References

South Coast Air Quality Management District Rule #1168

www.aqmd.gov/rules/reg/reg11/r1168.pdf

Green Seal Standard for Commercial Adhesives GS-36

http://www.greenseal.org/certification/standards/commercial_adhesives_GS_36.cfm

6.2 Flooring System

1 point

Requirements (*Residential and Non-residential Uses*)

All flooring systems meet the requirements of IEQ 6.1 (above) and BR 10 AND at least ONE of the following:

- All carpets must be Carpet & Rug Institute's (CRI) Green Label Plus certified and carpet adhesives must have a VOC content of 50 g/l or less.
- All carpet cushions must be CRI Green Label certified.
- All of the hard surface flooring must be FloorScore certified. Flooring products covered by Floorscore include vinyl, linoleum, laminate flooring, and rubber flooring.
- All finish flooring is concrete and all finishes, sealers and stains must meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1113 (see Basic Requirement 10).

Required Verification

- Specifications
- Cut sheets for carpets and pads with the VOC limits highlighted
- Cut sheets for non-carpet flooring with listed FloorScore certification
- Tabulation using the AEGB Low Emitting Materials Form

Strategies

- ✓ Clearly identify Label or Certification criteria required in flooring systems specifications.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ Specifications and General Contractor should require Label or Certification to be highlighted on submittals for all flooring systems.

References

Green Label Plus approved products - Carpet & Rug Institute:

www.carpet-rug.org/drill_down_2.cfm?page=8&sub=17&requesttimeout=350

Certified hard flooring – Floor Score:

www.scs-certified.com/iaq/floorscore_1.html

Resilient Floor Covering Institute

www.rfci.com

6.3 Composite Wood and Agrifiber Products

1 point

Requirements (*Residential and Non-residential Uses*)

All installed composite wood and agrifiber products used on the interior of the building (defined as inside of the weatherproofing system) shall contain no added urea-formaldehyde resins.

Composite wood and agrifiber products are defined as: particle board, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, door cores, and plywood. Movable furniture and equipment are not considered base building elements and are not included.

Required Verification

- Specifications
- Cut sheets and MSDS for composite wood and agrifiber products with urea-formaldehyde levels highlighted.
- Tabulation using the AEGB Low Emitting Materials Form

Strategies

- ✓ Clearly identify composite wood and agrifiber products in specifications that do not contain added urea-formaldehyde. Ensure, if the specification allows for “or equal”, that “no added urea-formaldehyde” is included in product specifications.
- ✓ Specifications and General Contractor should require composite wood and agrifiber product submittals and/or MSDS with urea-formaldehyde quantity highlighted.

References

Cabinets Fact Sheet – Austin Energy Green Building

www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Building/Resources/Fact%20Sheets/cabinets.pdf

6.4 Insulation

1 point

Requirements (*Residential and Non-residential Uses*)

All installed insulation contains no added urea-formaldehyde, including piping.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Specifications
- Cut sheets and MSDS for insulation with urea-formaldehyde levels highlighted.
- Tabulation using the AEGB Low Emitting Materials Form

Strategies

- ✓ Clearly identify insulation products in specifications that do not contain added urea-formaldehyde. Ensure, if the specification allows for “or equal”, that “no added urea-formaldehyde” is included in product specifications.
- ✓ There are plenty of options for piping that are GreenGuard certified.
- ✓ Specifications and General Contractor should require insulation submittals and/or MSDS with urea-formaldehyde quantity highlighted..

References

Greenguard IAQ Certified Products® - Greenguard:

www.greenguard.org/

Products meeting CHPS Low-Emitting Materials criteria - Collaborative for High Performance Schools (CHPS):

www.chps.net/dev/Drupal/node/287

7. Humidity Control

1 point

Intent

Regulate indoor humidity at the source to help prevent mold and mildew growth and improve thermal comfort.

Requirements (*Residential Uses*)

Humidity is controlled by BOTH the following measures:

1. Exhaust fans are vented to the outside for 100% of dwellings in the following locations:
 - above cooktop/stove
 - any room with a tub or shower
2. Bathroom (with shower or tub) fan connected to a timer or humidistat.

Note: It is not sufficient to rely on natural ventilation for this credit.

Required Verification

- Plans showing locations of exhaust fans to the outside
- Exhaust fan specifications
- Documentation of commissioning efforts for components dehumidification systems
- On-site verification by AEGB staff on final inspection

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

8. Acoustic Quality

1 point

Intent

To provide a building environment free from disturbing mechanical equipment noise and vibration and excessive sound reverberation that is designed with sufficient acoustical privacy and adequate sound isolation. To minimize tonal noise and intermittent noise sources in occupied spaces, as these noise sources are particularly troublesome.

Requirements (*Residential and Non-residential Uses*)

Achieve all of the following measures:

- Define appropriate background sound levels, reverberation decay times, speech intelligibility, and sound isolation for the building use. Identify spaces where impact noises are likely and address the potential problem.
- Provide mechanical and duct systems designed to meet guideline Room Criteria (RC), Noise Criteria (NC) or Balanced Noise Criteria (NCB) provided by current copy of ASHRAE Applications Design Guidelines for HVAC Sound and Vibration Control Chapter.
- Provide appropriate vibration isolation for mounted equipment.
- Select equipment that could not be characterized as “tonal”.
- Specify surface finishes and/or masking systems to provide appropriate sound intelligibility and privacy.
- Specify partitions, ceilings, floor/ceiling assemblies, building layouts, and vestibules to provide adequate sound isolation between spaces.
- Mitigate intermittent noise sources such as footfall and loading dock noise.

Required Verification

- Narrative of the acoustical Owner’s Project Requirements and Basis of Design
- One-third octave band sound data submittals for the following:
 - air handling equipment inlets, discharges, and casing radiation
 - exhaust fan bare fan sound levels
 - generators
 - pumps
 - chillers
- Vibration isolation schedule.
- Surface finish schedules including Noise Reduction Coefficient (NRC) and Ceiling Attenuation Class (CAC) Ratings, as applicable
- Schedule of partition and floor/ceiling assembly cross sections. Indicate Sound Transmission Class (STC), CAC and Impact Insulation Class (IIC) ratings of partitions, ceilings and floor/ceilings on plans
- On-site verification by AEGB staff of assemblies and isolation devices

Strategies

- ✓ Clearly define all items from the first bullet in “Requirements” section in the Owners Project Requirements and Basis of Design

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

"A Practical Guide to Noise and Vibration Control for HVAC Systems" and "Applications of Manufacturers Sound Data" by Mark E. Schaffer

Acoustics.com – acoustic considerations and strategies

www.acoustics.com/

Acoustical Society of America Store

asastore.aip.org/

9. Outdoor Pollutant Sources

1 point

Intent

Avoid exposure of building occupants to hazardous particulates and chemical pollutants (vehicle exhaust, pollens/allergens, etc.) that can enter the building through air intakes and entryways.

Requirements (*Residential and Non-residential Uses*)

Minimize and control outdoor pollutant sources by ALL of the following measures:

1. Entrances, operable windows and fresh air intakes shall be located a minimum 30 feet away from designated smoking areas.
2. Install appropriate signage to clearly designate where smoking is permitted and not permitted.
3. Install permanent entryway systems to the main building (grills, grates, mats), a minimum 6 feet long (10 feet recommended), in the primary direction of travel to capture dirt from entryways directly connected to the outdoors.
4. Specify effective filters for intake, return and re-circulation air.

Required Verification

- Plans indicating the location of the smoking sections, the 30 foot radius around the areas and all entrances, operable windows and air intakes.
- Signage plans denoting smoking and no smoking areas.
- Entrance plans, details and cut sheets describing the entryway system
- Narrative including: 1) identified contaminants that may be of concern if allowed to enter the building, as observed during a 24 hr survey of the building site and its immediate surroundings, and 2) design strategies that can be used to mitigate identified air borne contaminants from the outdoors
- Specifications of filters from intake, return and recirculation (or filter matrix).
- On-site verification by AEGB staff of filters, entryway systems and designated smoking areas.

Strategies

- ✓ Design entryway systems to include permanently installed grates, grilles, or slotted systems that allow for cleaning underneath. Roll-out mats are only acceptable when maintained on a weekly basis by a contracted service organization.
- ✓ Site survey should include:
 - Description of nearby facilities
 - Observation of odors or irritants

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- Description of visible plumes
- Description of particulate or chemical air contaminants (i.e. dust, allergens, vehicle exhaust, etc)
- Direction of prevailing winds

References

City of Austin Smoking in Public Places Ordinance:

[www.amlegal.com/austin_nxt/gateway.dll/Texas/austin/title10publichealthservicesandsanitation/chapter10-6smokinginpublicplaces?f=templates\\$fn=altmain-nf.htm\\$3.0#JD_10-6-8](http://www.amlegal.com/austin_nxt/gateway.dll/Texas/austin/title10publichealthservicesandsanitation/chapter10-6smokinginpublicplaces?f=templates$fn=altmain-nf.htm$3.0#JD_10-6-8)

IAQ Design Tools for Schools Graphic – U.S. EPA:

www.epa.gov/iaq/schooldesign/controlling.html

Fundamentals of IAQ in Buildings - U.S. EPA – I-BEAM Text Modules:

www.epa.gov/iaq/largebldgs/i-beam/text/

10. Construction Indoor Air Quality

1 point

Intent

Prevent indoor air quality problems that result from the construction process.

Requirements (*Residential and Non-residential Uses*)

Develop and implement a Construction Indoor Air Quality Management Plan that meets or exceeds the recommended control measures of the Sheet Metal and Air Conditioning National Contractor's Association (SMACNA) *IAQ Guidelines for Occupied Buildings Under Construction*. The plan should include each of these key areas of IAQ protection: Scheduling, Source Control, HVAC Protection, Pathway Interruption, and Housekeeping.

Protect stored on-site or installed absorptive materials from moisture damage.

If permanently installed air handlers are used during construction, filtration media with a minimum MERV of 8 shall be used at each return grille. Replace all media filters immediately prior to occupancy.

Required Verification

- Copy of the Construction IAQ Management Plan, highlighting the five requirements of the SMACNA *IAQ Guidelines for Occupied Buildings Under Construction*
- Photographs of on-site construction IAQ measures, such as duct protection and on-site storage of absorptive materials
- Cut sheets of filtration media used during construction with MERV values highlighted.
- On-site verification by AEGB staff, as schedule permits

Strategies

- ✓ Review references for possible strategies.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

IAQ Guidelines for Occupied Buildings Under Construction - Sheet Metal and Air Conditioning National Contractor's Association:

www.smacna.org/bookstore/

Indoor Pollution Prevention Fact Sheet – Austin Energy Green Building

www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Building/Resources/Fact%20Sheets/indoorPollution.pdf

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

MATERIALS & RESOURCES

Sustainable Material Choices, Use and Disposal

1. Additional Construction Waste Management

1 point

Intent

Divert construction, demolition, and land clearing debris from landfill disposal and incineration. Redirect reusable and recyclable material back to the manufacturing process.

Requirements (*Residential and Non-residential Uses*)

Recycle and/or salvage at least 75% of non-hazardous construction waste (by weight) of construction, demolition, and land clearing waste excluding excavated soil and stone.

The following table shall be used to calculate percentage of construction waste diverted when weight tickets are not available:

SOLID WASTE CONVERSION FACTORS	
MATERIAL	DENSITY, (lbs/CY)
Mixed Waste	350
Wood	300
Cardboard	100
Gypsum Wallboard	500
Rubble	1400
Steel	1000

Required Verification

- Specifications for Construction Waste Management.
- Construction Waste Management Plan submitted before construction begins (if applicable, submit Demolition Waste Management Plan before demolition begins).
- Monthly updates to AEGB Construction Waste Management Calculator.
- Copies of weight tickets for recycling, salvage and landfill (electronic copies preferred).
- Completed AEGB Construction Waste Management Calculator.

Strategies

- ✓ Employ building materials that are highly recyclable and a construction sequence conducive to maximizing recycling. If the building site has an existing structure, design for reuse of the building or the materials on site.
- ✓ If you are considering utilizing a co-mingled construction waste recycling service provider, collect and compare the facility's diversion rates and

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

techniques. Be aware your project's waste may be combined with that of other projects and/or a historic diversion rate for the facility may be used, which may not be your actual diversion rate. On-site separation may be preferable.

- ✓ To ensure you have the inputs required for the AEGB Construction Waste Calculator, weight tickets or recycling reports should list:
 1. Date
 2. Hauler or subcontract hauler
 3. Destination (landfill or recycler)
 4. Amount of each material recycled, salvaged or reused (sheetrock, wood, concrete, cardboard, plastics, etc.)
 5. Amount of materials not recycled, such as rejected loads of contaminated recycling and dump
- ✓ To convert pounds to tons, one ton equals 2,000 pounds.
- ✓ The AEGB Construction Waste Calculator contains a volume to weight calculator for converting cubic yards of various materials to pounds. This is especially useful for converting land clearing vegetation mulched on site to pounds, since this material is not weighed.
- ✓ Rejected loads due to contamination must be counted as landfill waste instead of recycling even though the intention was to recycle.
- ✓ Do not include hazardous materials, i.e. lead and asbestos, or soil and stone removed from site in either total materials removed from site or recycled/landfilled total.

References

The Waste Reduction Assistance Program is available to assist with all aspects of solid and hazardous waste management through the on-site waste reduction assessment service, materials exchange, and business information-clearing house. Have a waste reduction assessment conducted for facility operation; contact City of Austin Solid Waste Services Waste Reduction Assistance Program at 974-WRAP.

www.ci.austin.tx.us/sws/commercial_wrap.htm

2. Building Reuse

Intent

Extend the life cycle of the existing building stock, conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials, manufacturing, and transport.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

2.1 Envelope and Structure

1 - 2 points

Requirements (*Residential and Non-residential Uses*)

Option A: Incorporate at least 40% (surface area) of existing non-hazardous building envelope (including exterior skin and framing, excluding window assemblies and non-structural roofing material) and structure (including structural floor and roof decking) in the new building. (1 point)

Option B: Incorporate at least 80% (surface area) of existing non-hazardous building envelope (including exterior skin and framing, excluding window assemblies and non-structural roofing material) and structure (including structural floor and roof decking) in the new building. (2 points)

Required Verification

- Indicate which option is chosen in the Strategies/Comments column of the Worksheet tab in Rating Packet.
- Plans and elevations indicating pre-construction existing building shell and structure and intended area to be preserved.
- Calculations from the AEGB Building Reuse Calculator.

Strategies

- ✓ For clarification, this credit includes:
 - All portions of the exterior skin and framing except for window assemblies and non-structural roofing material.
 - All structural members including structural floor and roof decking.

References

Building Reuse Case Studies - Smart Growth Network:
www.smartgrowth.org/library/bytype.asp?typ=2

2.2 Interior Non-Structural Elements

1 point

Requirements (*Residential and Non-residential Uses*)

Incorporate at least 50% (surface area) of existing non-hazardous interior non-structural elements (walls, doors, floor coverings and ceiling surfaces) in the new building.

Required Verification

- Plans and elevations indicating pre-construction existing building interior elements and intended areas to be reused.
- Calculations from the AEGB Building Reuse Calculator.

Strategies

- ✓ Review references for possible strategies.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

References

Building Reuse Case Studies - Smart Growth Network:

www.smartgrowth.org/library/bytype.asp?typ=2

3. Exterior Wall Materials

1 point

Intent

Use long-lasting alternatives to wood in exterior walls to decrease dependence on forest products to ensure that insulation systems are continuous, minimize opportunities for thermal transfer, and reduce air infiltration through the exterior wall.

Requirements (*Residential and Non-residential Uses*)

Exterior walls (minimum of 50% of surface area) are constructed of material other than stick frame construction (e.g. Structural Insulated Panels (SIP), Insulated Concrete Forms (ICF), Autoclaved Aerated Concrete (AAC), etc.)

Required Verification

- Plans and specifications including insulating value (R-value) of materials
- On-site verification by AEGB staff

Strategies

- ✓ Review references for possible strategies.

References

Structural Insulated Panel Association

www.sips.org/

Insulating Concrete Form Association

www.forms.org/

Autoclaved Aerated Concrete Products Association

www.aaccpa.org

4. Durable Floor Materials

1 point

Intent

Floors constructed of durable, long-lasting materials, will not need replacement as often as non-durable products, thus reducing landfilled materials and future costs and time associated with flooring repair and removal between residents. Durable floors also help maintain good indoor air quality.

Requirements (*Residential and Non-residential Uses*)

Floor is durable material (e.g. concrete, stone, brick, and ceramic tile) for a minimum of 75% of all flooring.

Other flooring materials accepted as durable: wood, linoleum, strand bamboo, and manufactured wood.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Flooring materials not considered durable are carpet, vinyl sheet, VCT, rubber, and bamboo (except strand bamboo).

Required Verification

- Plans with description of flooring area
- Floor area calculation matrix including the sum of all flooring materials.
- On-site verification by AEGB staff

Strategies

- ✓ Review references for possible strategies.

References

5. Low VOC Paints, Coatings, Adhesives and Sealants 1 point

Intent

Reduce the quantity of air contaminants that are odorous or potentially irritating to installer and occupant health and comfort.

Requirements (*Residential and Non-Residential Uses*)

All paints, primers, and anti-corrosive coatings applied on-site to the building exterior must not exceed the volatile organic compound (VOC) limit of Green Seal standard GS-11 as shown below. All coatings, adhesives, and sealants applied on-site to the building exterior must not exceed the current VOC limits set by South Coast Air Quality Management District (SCAQMD) Rules 1113 and 1168. For spray adhesives, meet the Green Seal standard for Commercial Adhesives GS-36. *If a specialty product does not have a low VOC option, contact your AEGB representative for approval prior to application.*

Example: Topcoat Paints, Primers, and Anti-Corrosive Coatings

<u>Paint Type</u>	<u>VOC Limit (g/L)*</u>
Non-flat Topcoat	100
Flat Topcoat	50
Primer	100
Anti-Corrosive Coating	250

* The calculation of VOC shall exclude water and colorants added at the point-of-sale.

Required Verification

- Specifications
 - Tabulation using the AEGB Low Emitting Materials Form
 - Product submittals and MSDS with VOC content highlighted

Strategies

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ Include contract language for contractors to provide low-emitting exterior paint information in submittals.

References

Green Seal GS-11– Paints and Coatings, 2nd Edition May 12, 2008:

www.greenseal.org/certification/standards/paints_and_coatings.pdf

SCAQMD Rule 1113 – Coatings:

www.aqmd.gov/rules/reg/reg11/r1113.pdf

SCAQMD Rule 1168 –Adhesives and Sealants:

www.aqmd.gov/rules/reg/reg11/r1168.pdf

Green Seal Standard for Commercial Adhesives GS-36

http://www.greenseal.org/certification/standards/commercial_adhesives_GS_36.cfm

6. Interior and Exterior Materials

6.1 Performance Options a-d

6.1a. Salvaged Materials

1 - 2 points

(Interior and Exterior Materials – Performance Options)

Intent

Extend the life cycle of targeted building materials and reduce the environmental impacts related to materials manufacturing and transport.

Requirements (*Residential and Non-residential Uses*)

Option A: Salvaged or refurbished materials account for 5% (dollar value) of total project building materials cost. (1 point)

Option B: Salvaged or refurbished materials account for 10% (dollar value) of total project building materials cost. (2 points)

Mechanical, electrical and plumbing components as well as specialty items should not be included in the calculations. Only include materials permanently installed in the project.

Required Verification

- Specifications include 1) Submittals to include salvaged content and 2) Individual material sections include salvaged content requirement (as necessary)
- Calculations from the AEGB Building Materials Calculator.

Strategies

- ✓ Include contract language for contractors to provide salvaged material information in submittals.

References

Salvaged Building Materials Business Directory – Building Materials Reuse Association:

ubma.org/

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Re-Store Salvaged Building Materials Outlet – Austin Habitat for Humanity:
www.re-store.com/

6.1b. Recycled Content

1 - 2 points

(Interior and Exterior Materials – Performance Options)

Intent

Increase demand for building products that have incorporated recycled content materials, thereby reducing the environmental impacts resulting from the extraction of new materials.

Requirements (*Residential and Non-residential Uses*)

Option A: Building materials contain recycled content (the sum of post-consumer recycled content plus one-half of the post-industrial content) of at least 10% (by dollar value) of total project building materials cost. (1 point)

Option B: Building materials contain recycled content (the sum of post-consumer recycled content plus one-half of the post-industrial content) of at least 20% (by dollar value) of total project building materials cost. (2 points)

Mechanical, electrical and plumbing components as well as specialty items should not be included in the calculations. Only include materials permanently installed in the project.

Required Verification

- Specifications include 1) Submittals to include recycled content and 2) Individual material sections include recycled content requirement (as necessary)
- Calculations from the AEGB Building Materials Calculator.

Strategies

- ✓ Include contract language for contractors to provide recycled content information in submittals.

References

EPA Comprehensive Procurement Guidelines:

www.epa.gov/cpg/

Recycled Content Product Database:

www.ciwmb.ca.gov/rcp/

Recycled Content Product Database from Texas Manufacturers - Clean Texas:

www.tceq.state.tx.us/assistance/P2Recycle/TXrecy/resources.html

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

6.1c. Texas Sourced Materials

1 - 2 points

(Interior and Exterior Materials – Performance Options)

Intent

Increase demand for materials that are manufactured in Texas, thereby reducing the environmental impacts resulting from their transportation and supporting the State economy.

Requirements (*Residential and Non-residential Uses*)

Option A: Building materials and products are extracted and/or manufactured (final assembly) regionally within Texas for at least 30% (dollar value) of the project materials cost (1 point).

Option B: Building materials and products are extracted and/or manufactured (final assembly) regionally within Texas for at least 50% (dollar value) of the project materials cost (2 points).

Mechanical, electrical and plumbing components as well as specialty items should not be included in the calculations. Only include materials permanently installed in the project.

Required Verification

- Specifications include 1) Submittals to include Texas-sourced content, and 2) Individual material sections include Texas-sourced requirement (as necessary)
- Calculations from the AEGB Building Materials Calculator.

Strategies

- ✓ Include contract language for contractors to provide Texas-sourced materials information in submittals.

References

Resources for Recycled Content Products- TCEQ:

www.tceq.state.tx.us/assistance/P2Recycle/TXrecy/resources.html

6.1d. Certified Wood

1 point

(Interior and Exterior Materials – Performance Options)

Intent

Encourage environmentally responsible forest management.

Requirements (*Residential and Non-residential Uses*)

At least 50% (by dollar value) of new wood-based materials are certified in accordance with the Forest Stewardship Council (FSC) guidelines for wood building components.

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

Required Verification

- Specifications include 1) Submittals to include certified wood content and 2) Individual material sections include certified wood requirement (as appropriate)
- Submittals with FSC chain of custody information and quantity highlighted
- Calculations from the AEGB Certified Wood Calculator

Strategies

- ✓ Include contract language for contractors to provide FSC chain of custody information in submittals.

References

FSC Certified Products Database:

<http://info.fsc.org/>

Forest Stewardship Council:

www.fsc.org

6.2. Interior and Exterior Materials – Prescriptive Options

1-3 points

Intent

Use products in construction that have environmentally preferable attributes.

Requirements (*Residential and Non-residential Uses*)

Achieve at least one attribute per material listed below:

Material	Recycled Content	Rapidly Renewable	Texas-Sourced	FSC Certified	Low-emitting / Formaldehyde-Free	Points
All cabinetry						0.5
All interior doors						0.5
All trim / molding						0.5
All studs					Metal studs	0.5
All flooring						0.5
All insulation						0.5

Note: Only whole points will be awarded.

Required Verification

- Specifications
- Submittal with selected attribute highlighted

Strategies

- ✓ Select materials that contain either or both post-consumer recycled content (PCRC) and post-industrial recycled content (PIRC).
- ✓ Select materials that have a planting – harvesting cycle of less than 10 years

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

- ✓ Select materials that are extracted and/or manufactured in the state of Texas
- ✓ Select materials that are Forest Stewardship Council chain-of-custody certified
- ✓ Select materials that meet standards in this Guidebook for low-emitting materials, (i.e., for materials that contain no added urea-formaldehyde reference IEQ 6c. Composite Wood and Agrifiber Products and IEQ 6d. Insulation)

References

Resources for Recycled Content Products - TCEQ:

www.tceq.state.tx.us/assistance/P2Recycle/TXrecy/resources.html

EPA Comprehensive Procurement Guidelines:

www.epa.gov/cpg/

Recycled Content Product Database:

www.ciwmb.ca.gov/rcp/

Forest Stewardship Council:

www.fsc.org

Greenguard IAQ Certified Products:

www.greenguard.org/

Particleboard and Medium Density Fiberboard - Green Seal Report:

www.greenseal.org/resources/reports/CGR_particleboard.pdf

Green Label Plus approved products - Carpet & Rug Institute:

www.carpet-rug.org/drill_down_2.cfm?page=8&sub=17&requesttimeout=350

Certified hard flooring – Floor Score:

www.scs-certified.com/iaq/floorscore_1.html

South Coast Air Quality Management District

www.aqmd.gov/rules/reg/reg11/r1168.pdf

7. PVCs and Phthalates

1-2 points

Intent

To reduce the manufacturing, use and disposal of materials containing polyvinyl chloride (PVC) and phthalates, and the toxic manufacturing byproducts dioxin, ethylene dichloride, and vinyl chloride. These chemicals contribute to the environmental burden of endocrine disrupting chemicals (EDCs) and are associated with a variety of health problems.

Requirements (*Residential and Non-residential Uses*)

The following installed materials must not contain PVC:

- Flooring and interiors (e.g., vinyl composition tile, carpet, floor covers, blinds, shower enclosures, tub surrounds)
- Roofing systems (e.g., roof membranes, waterproofing membranes and flashing)
- Wall systems (e.g., siding, waterproofing membranes, wall coverings, windows, doors, wallpaper, partitions, fiber reinforced plastics in any janitorial or food service areas)
- Outdoor equipment (e.g., playground equipment, outdoor furniture)

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

In addition, one of the following two materials must not contain PVC (1 point)

OR

both of the following materials must not contain PVC (2 points) :

- Potable and wastewater plumbing systems (e.g., piping)
- Electrical systems (e.g., insulation, sheathing, conduit and electrical boxes)

Required Verification

- Specifications stating materials will not be made with PVC
- Cut sheet submittal or manufacturer documentation demonstrating no PVC
- Final site visit verifying that non-PVC materials are installed

Strategies

- ✓ Review Perkins and Will Precautionary List for product alternatives.
- ✓ Obtain documentation from manufacturer in design phase assuring that products do not contain PVC

References

Perkins and Will Precautionary List <http://transparency.perkinswill.com/>

Endocrine Society scientific statement on Endocrine Disrupting Chemicals

http://www.endo-society.org/journals/ScientificStatements/upload/EDC_Scientific_Statement.pdf

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

EQUITY

Affordability and Access to Information

These credits can be applied for as Innovations in the Online Rating Tool

1. Housing Affordability

1-3 points

Intent

Assure that housing for people with lower incomes is achieving the energy and water efficiency, improved indoor air quality, reduced utility bills, and other benefits of green building. The provision of housing that is affordable to own or rent and affordable to operate is imperative to a sustainable community. Projects that include dwelling units that are affordable to households with incomes at or below 80% MFI (home ownership, i.e. condominiums) or 60% MFI (apartment homes) may be able to receive points for housing affordability under this credit. Projects that include dwelling units that are affordable to households with incomes at or below 30% MFI may be able to receive additional credit.

Requirements

Prior to Conditional Approval, projects must submit the Housing and Transportation Affordability Data Sheet that includes a narrative describing the population expected to reside in the development, the transportation options most amenable to this population, housing and transportation data for both the project and the census block in which the project is located, and a narrative that describes project implications from this brief analysis. Census block data can be found at htaindex.cnt.org/ by zooming in on the project location.

The City of Austin's SMART Housing program promotes mixed-income housing by allowing fee waivers for projects that provide varying levels of affordable housing for a five year timeframe for multifamily buildings. SMART Housing then monitors rental and mortgage rates for applicable units to assure that the affordability levels are being met. In addition to SMART housing, other funding mechanisms through banks and state and local funding agreements require that certain levels of affordability are provided over a specified number of years and can provide an assurance that housing costs will meet affordability criteria.

Provide affordable dwelling units as part of a SMART Housing or financing agreement through which affordability will be verified over the specified time period.

- Document that at least 20% of dwelling units will be affordable to homeowners living at or below 80% MFI for a period of at least 5 years; OR 20% of dwelling units will be affordable to renting households living at or below 60% MFI for a period of at least 5 years (1 point); OR
- Document that at least 20% of dwelling units will be affordable to homeowners living at or below 80% MFI for a period of at least 15 years; OR 20% of dwelling units will be affordable to renting households living at or below 60% MFI for a period of at least 15 years (2 points);
- Document that at least 20% of apartment (rental) dwelling units will be affordable to people living at or below 30% MFI for a period of at least 15 years (The 2009

Key to Required Verification

- | |
|---|
| <ul style="list-style-type: none">○ Needed for Conditional Approval• Needed for Final Approval |
|---|

Austin Comprehensive Market Study has shown that the most substantial housing need in Austin is for rental properties that are available to households at 30% MFI or less) (3 points)

Required Verification

- This credit should be applied for as an Innovation in the online rating tool.
- Completed Housing and Transportation Affordability Data Sheet
- Signed SMART Housing letter or financing agreement verifying the MFI levels and that these affordability criteria will be verified through a financing or other agency for the required time period (at least 5 or 15 years)
- A pro-forma from the developer showing the projected rents/sales price

Strategies:

- ✓ The H + T Affordability Data Sheet is intended to provide a snapshot of affordability levels for both housing and transportation in the community immediately surrounding the project. Similar to the Site Characteristics Study required for Site credit 3, the data sheet should be completed as early in the project as possible in case findings could impact decision making regarding housing and transportation affordability.

References

LEED for Neighborhood Developments Pilot, June 2007, NPD Credit 4: Affordable rental housing

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148>

Austin Comprehensive Market Study including affordability analysis

<http://www.ci.austin.tx.us/housing/apr08chms.htm>

Key to Required Verification

- Needed for Conditional Approval
- Needed for Final Approval

2. Access to Information

1 point

Intent

To improve access to the internet to all residents in multifamily buildings. Access to information via the internet is an integral part of assuring an equitable living environment. Today the internet is used to gain employment, search for housing, pay bills, and can potentially be used to manage our home energy use. In addition, internet service can be a substantial expenditure for people with low disposable incomes. Providing internet access to residents in multifamily buildings as internet lounges on site can improve quality of life for residents. In addition, as we move to smart grid capabilities, people may have opportunities to manage and reduce their energy use, and energy bill, via the internet.

Requirements

Meet the following criteria:

- Provide an extended hour computer lounge with free internet access for all residents. The lounge shall have 1 computer with high speed internet access for every 15 residents.

Required Verification

- This credit should be applied for as an Innovation in the online rating tool
- Show lounge and computer stations on plans
- Submit internet account agreement/contract
- Verification on final inspection

3. Transportation Options

1-2 points

Intent

Housing and transportation together account for 40-70% of the average household income. Having a variety of transportation options can increase affordability by allowing reduced auto dependence and improve environmental quality by reducing the number of single-occupancy vehicles. Access to public transportation sufficient enough to allow for car-free living, i.e. public transportation to jobs, schools, stores and services, can substantially reduce a household's transportation cost burden.

Requirements

Prior to Conditional Approval, projects must submit the Housing and Transportation Affordability Data Sheet that includes a narrative describing the population expected to reside in the development, the transportation options most amenable to this population, housing and transportation data for both the project and the census block in which the project is located, and a narrative that describes project implications from this brief analysis. Census block data can be found at htaindex.cnt.org/ by zooming in on the project location.

Demonstrate that residents have access to public transportation that is sufficient to allow for car-free living:

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- Development must be within ¼ mile of one or more bus or rail stops that together offer high frequency service (averaging at least 3 buses per hour weekdays and 2 buses per hour weekends; rail stops can be counted as equivalent to bus stops); AND
 - At least one of the buses must stop within ¼ mile of a public transportation activity center such as:
 - Transit Center (e.g. North Lamar TC, South Congress TC, etc.)
 - State Capital
 - 2nd and Congress
 - Barton Creek Mall
 - Capital Plaza
 - I-35 and East 32nd
 - University of Texas
- An activity center is defined as an area served by at least 5 bus routes. (1 point)
- In addition to meeting the above criteria for bus and/or rail, the development offers additional public transportation options such as Car 2 Go, or a van pool that offers rides at least twice per week to a supermarket, shopping center, or other popular destination. (2 points)

Required Verification

- This credit should be applied for as an Innovation in the online rating tool.
- Completed Housing and Transportation Affordability Data Sheet
- Submit a map outlining the project site with locations and marks for public transportation options (i.e. mark bus stops with the bus lines that come to that stop, mark which lines connect to activity centers, mark van pool pick up locations, etc.). A Google map or other online map with hand marks will suffice.
- Submit calculations demonstrating high frequency service
- If a transportation or car sharing service (car share, van pool, etc.) will be used, submit a copy of the contract demonstrating the transportation option will be available to tenants.

Strategies:

- ✓ Projects receiving credit for Transportation Affordability may also achieve the Public Transportation credit under Site

The H + T Affordability Data Sheet is intended to provide a snapshot of affordability levels for both housing and transportation in the community immediately surrounding the project. Similar to the Site Characteristics Study required for Site credit 3, the data sheet should be completed as early in the project as possible in case findings could impact decision making regarding housing and transportation affordability.

References

Center for Neighborhood Transportation Housing + Transportation Index
http://htaindex.cnt.org/mapping_tool.php?region=Austin--San%20Marcos,%20TX
Brookings Institution, The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice
<http://www.cnt.org/repository/AffordabilityIndexBrief.pdf>
Capital Metro System Map:
http://www.capmetro.org/riding/current_schedules/maps/system_map.pdf

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INNOVATION

Creative, new sustainable solutions

Intent

Develop sustainable solutions that demonstrate a comprehensive approach and quantifiable sustainability benefits beyond the requirements of measures defined in this program.

Requirements (*Residential and/or Non-residential Uses*)

Submit a proposal of the innovation measure to Austin Energy Green Building for approval. The proposal must include:

- the intent of the measure
- requirements for compliance
- submittals to demonstrate compliance, and
- the design approach (strategies) that might be used to meet the requirements.

Required Verification

- Proposal of innovative measure
- Submit required documentation to demonstrate compliance.

Strategies

- ✓ Early in the design process, for example as part of a charrette or integrated team meeting, encourage discussion of potential sustainability measures, i.e. measures that could improve the environmental or equity impacts from the project
- ✓ Talk to your AEGB representative about any and every sustainability idea your team comes up with to see what could qualify as innovation credits
- ✓ For new technologies, talk to product manufacturers about getting cost reductions for bulk purchases or inclusion in case studies
- ✓ Look for design and technologies that are emerging in the building industry or otherwise not yet covered in the AEGB Multifamily rating tool:
- ✓ e.g. designing for physical activity, composting

Example Innovation Credits:

1. A current credit is exceeded to the next increment or level:

Ex. Construction Waste Management: Recycle and/or salvage at least 90% (by weight) of non-hazardous construction and demolition waste, excluding excavated soil and stone. 1 point.

Ex. Heat Island Reduction: High-albedo paving materials [Solar Reflective Index (SRI) of 29 or above] on at least 60% of non-roof impervious surfaces or instead of meeting one requirement, meets two of the Heat Island Reduction choices. 1 point

Ex. On-Site Renewable Energy: Solar panels provided for each residential unit. 1-4 points.

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- Ex. Green Energy: Residential units signed up for Green Choice. 1 point.
3. Propose your own innovative measure that is not covered by existing measures within the Online worksheet to meet the requirements above. Some example Innovation measures are provided on the Online Tool.

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APPENDIX - General Green Building Resources

IRS publications:

- *Energy Savings Modeling and Inspection Guidelines for Commercial Building Federal Tax Deductions*, 2nd edition, May 2007.

www.nrel.gov/docs/fy07osti/40467.pdf

- Notice 2006-52: *Deduction for Energy Efficient Commercial Buildings*:

www.irs.gov/pub/irs-drop/n-06-52.pdf

Energy Improvement and Extension Act of 2008 Summary including energy efficiency tax incentives for: commercial buildings, combined heat and power systems (CHP) and for plug-in hybrid purchases:

www.finance.senate.gov/sitepages/leg/LEG%202008/091708%20Staff%20Summary%20of%20the%20Energy%20Improvement%20and%20Extension%20Act.pdf

Austin Energy, Commercial and Multifamily Programs and Rebates \$:

www.austinenergy.com/Commercial/index.htm

www.austinenergy.com/Energy%20Efficiency/Programs/Rebates/Commercial/

Austin Energy Green Building:

www.austinenergy.com/go/greenbuilding

Austin Environmental Directory, 2006 edition:

A sourcebook for environmental issues, products, services, and organizations in the Austin area

www.environmentaldirectory.info

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Austin Water Utility, Multifamily and Commercial Programs, Rebates \$, and *Water Efficient Equipment and Design*:

www.ci.austin.tx.us/watercon/default.htm

www.ci.austin.tx.us/watercon/downloads/EquipmentGuide.pdf

BuildingGreen, LLC:

www.buildinggreen.com

BuildingGreen publishes accurate, unbiased, and timely green design information through many publications, including *Environmental Building News*, the *GreenSpec* directory of green products, and the *Building Green Suite* of online tools.

Business Energy Advisor, Austin Energy and ESource:

www.austinenergy.com/Energy%20Efficiency/Tools%20and%20Tips/Commercial/energyAdvisor.htm

Center for Maximum Potential Building Systems:

www.cmpbs.org/

Energy Design Resources:

www.energydesignresources.com

Energy Design Resources offers a valuable palette of energy design tools and resources that help make it easier to design and build energy-efficient commercial and industrial buildings in California. The goal of this effort is to educate architects, engineers, lighting

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designers, and developers about techniques and technologies that contribute to energy efficient nonresidential new construction.

Environmental Building News and *GreenSpec® Guide*:

www.buildinggreen.com/

<https://www.buildinggreen.com/ecommerce/gbp.cfm?>

Green Building Pages – building materials database and design tool:

www.greenbuildingpages.com

Green Building Resource Guide:

www.greenguide.com

Healthy Building Network:

www.healthybuilding.net/

Lawrence Berkeley National Laboratory *The Cost-Effectiveness of Commercial-Buildings Commissioning*:

eetd.lbl.gov/emills/PUBS/Cx-Costs-Benefits.html

New Buildings Institute:

www.newbuildings.org/

Rocky Mountain Institute:

www.rmi.org/

Smart Growth Network:

www.smartgrowth.org

Sustainable Design Resource Guide of Colorado:

<http://www.aiasdrq.org/>

U.S. Department of Energy, Building Technologies Program Building Database: Case studies of various building types around the world with information on green building features, financial analysis, and lessons learned:

eere.buildinggreen.com/

U.S. Green Building Council:

www.usgbc.org/

Texas Organizations

Design-Build-Live (aka Austin Sustainable Building Coalition):

www.designbuildlive.org

Infinite Power of TX – technology/concept fact sheets:

www.infinitepower.org

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Solar Austin – advocacy group:

www.solaraustin.org/

TREIA (TX Renewable Energy Industries Assoc.):

www.treia.org

TXSES (TX Solar Energy Society):

www.txses.org

U.S. Green Building Council – Central Texas Chapter:

www.usgbc-centraltexas.org

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