



CITY OF COLLEGE STATION  
*Home of Texas A&M University®*

**AGENDA**  
**CONSTRUCTION BOARD OF ADJUSTMENTS AND APPEALS**  
**Monday, April 27, 2015, 6:00 p.m.**  
**City Hall Council Chambers**  
**1101 Texas Avenue**

1. Call meeting to order.
2. Presentation, possible action, and discussion on the appointment of a Chairman to the Construction Board of Adjustments and Appeals.
3. Hear visitors.
4. Presentation, possible action, and discussion to approve meeting minutes.
  - August 1, 2012
5. Public hearing, presentation, possible action, and discussion regarding a variance to Section C403.3.1, Economizers, of the 2012 International Energy Conservation Code.
6. Discussion and possible action on future agenda items - A Construction Board member may inquire about a subject for which notice has not been given. A statement of specific factual information or the recitation of existing policy may be given. Any deliberation shall be limited to a proposal to place the subject on an agenda for a subsequent meeting.
7. Adjourn.

Consultation with Attorney {Gov't Code Section 551.071; possible action.

**The Construction Board of Adjustments and Appeals may seek advice from its attorney regarding a pending and contemplated litigation subject or attorney-client privileged information. After executive session discussion, any final action or vote taken will be in public. If litigation or attorney-client privileged information issues arise as to the posted subject matter of this The Construction Board of Adjustments and Appeals meeting, an executive session will be held.**



## **MINUTES**

### **CONSTRUCTION BOARD OF ADJUSTMENTS AND APPEALS Wednesday, August 1, 2012, 5:30 PM City Hall Council Chambers 1101 Texas Avenue College Station, Texas, 77840**

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**MEMBERS PRESENT:** Chairman Charles Thomas, Rene Ramirez, Oran Mikeal, Marc Chaloupka, and Arthur Pinto

**MEMBERS ABSENT:** Mike Lane

**STAFF PRESENT:** Chris Haver, Karyna Soldatova, and Brittany Caldwell

**AGENDA ITEM NO. 1: Call to Order.**

Charles Thomas called the meeting to order at 5:30 p.m.

**AGENDA ITEM NO. 2: Presentation, possible action, and discussion on the appointment of a Chairman to the Construction Board of Adjustments and Appeals.**

Oran Mikeal motioned to appoint Charles Thomas as the Chairman of the Construction Board of Adjustments and Appeals. Marc Chaloupka seconded the motion, motion passed (5-0).

**AGENDA ITEM NO. 3: Hear Visitors**

No visitors spoke.

**AGENDA ITEM NO. 4: Consideration, discussion, and possible action to approve meeting Minutes.**

Marc Chaloupka motioned to approve the meeting minutes from November 16, 2011. Arthur Pinto seconded the motion, motion passed (5-0).

**AGENDA ITEM NO.5: Public hearing, presentation, possible action, and discussion on a recommendation to City Council regarding adoption of Appendix D Fire District of the 2012 International Building Code.**

Building Official Haver gave a presentation regarding the adoption of Appendix D Fire District of the 2012 International Building Official

There was general discussion amongst the Board regarding the adoption of Appendix D.

No one was present for the public hearing.

Marc Chaloupka motioned to recommend approval of the adoption of Appendix D Fire District of the 2012 International Building Code. Oran Mikeal seconded the motion, motion was passed (5-0).

**AGENDA ITEM NO. 6: Discussion and possible action on future agenda items – A Construction Board member may inquire about a subject for which notice has not been given. A statement of specific factual information or the recitation of existing policy may be given. Any deliberation shall be limited to a proposal to place the subject on an agenda for a subsequent meeting.**

There were no future agenda items.

**AGENDA ITEM NO. 7: Adjourn.**

Oran Mikeal motioned to adjourn the meeting. Mark Chaloupka seconded the motion, motion passed (5-0).

The meeting was adjourned at 5:52 p.m.

**APPROVED:**

**ATTEST:**

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**Chairperson**

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**Brittany Caldwell, Board Secretary**



## Construction Board of Adjustments and Appeals

### Staff Report

**Item:** Consideration of variance case # CONS2015-000001. A request to modify Section C403.3.1 (Economizers), of the 2012 International Energy Conservation Code.

**Item Background:** The applicant is requesting a variance to the economizer requirement as outlined in section C403.3.1, 2012 International Energy Conservation Code (IECC). Table C403.3.1(1) of the 2012 IECC, specifies that any cooling system that is equal to or exceeds 33,000 Btu/h and is located in Climate Zone 2A, which includes Brazos County, shall include an economizer. This variance case involves a proposed commercial building to be located at 1001 Colgate Drive.

An Air Economizer, as defined by Chapter 2 of the 2012 International Energy Conservation Code, is a duct and damper arrangement and automatic control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling during mild or cold weather.

There is currently a related code section that allows for an increase in equipment efficiency to allow an exemption from the requirements of economizers. Table C403.3.1(2) Equipment Efficiency Performance Exception For Economizers, this table takes climate zone and the percentage of efficiency improvement into consideration. Climate Zone 2A is not included in this section and therefore not eligible. This is only one of many exemptions, along with multiple exceptions, that the code allows for with regards to economizers, none of which can be applied to this project.

**Staff Recommendation:** Denial of variance. This recommendation is based on the following:

1. The code allows for a multitude of exceptions and exemptions for the requirement of economizers. None of those could be met in this case.
2. Economizers were shown on the initial plans submitted for review and listed on the COMcheck Report submitted. This information was provided by the applicant during the permit application process. Permits were issued based off of these documents.
3. To address the standards set forth in the Variances section of Section 3-1 Standard Administrative Code.
  - (i) It is our belief that this project lacks the special conditions or circumstances required for a variance from the applicable code section.
  - (ii) Again, we do not believe special conditions or circumstances exist in the case.
  - (iii) We feel that granting this request for variance would provide special privilege to the applicant, without having fully met the necessary requirements for a variance.
  - (iv) In this case, a variance is not needed to make possible the reasonable use of the building.
  - (v) While granting this variance would not be detrimental to the public health, safety and general welfare, we feel the code is clear on its' intent and allows for exceptions from the use of economizers. In this case, what was presented during the permit application process not only did not meet the exemptions to the code but clearly called for the installation of economizers.

### **Supporting Materials**

1. Application
2. Applicant's Supplemental Information



FOR OFFICE USE ONLY  
CASE NO.:  
DATE SUBMITTED: 4/8/15

# CONSTRUCTION BOARD OF ADJUSTMENTS & APPEALS

Variance Application Form

### MINIMUM SUBMITTAL REQUIREMENTS:

- Filing Fee of \$480.00.
- Application form completed in full\*
- Request form completed in full

### APPLICANT/PROJECT MANAGER'S INFORMATION (Primary Contact for the Project):

Name: Rodger Lewis  
 Mailing Address 1700 George Bush E, #140 City College Station  
 State TX Zip Code 77840 E-Mail Address Rodger@FellowshipBCS.org  
 Phone Number 979-694-1387 or 777-0888 Fax Number \_\_\_\_\_

### PROPERTY OWNER'S INFORMATION:

Name Fellowship Church  
 Mailing Address 1700 George Bush E, #140 City CS  
 State TX Zip Code 77840 E-Mail Address Rodger@FellowshipBCS.org  
 Phone Number 979-694-1387 Fax Number \_\_\_\_\_

### LOCATION OF PROPERTY:

Address 1001 Colgate Dr.  
 Lot 2 Block 2 Subdivision Southcreek Ph 1

Description (if there is no lot, block and subdivision)

### Action Requested

Variance from requirement of "economizers" on 11 AC units.  
Please see attached detail pages

### Applicable Ordinance Section

IFCC 2012 Table C 403.3.1(i) see attached

**\*Note:** Additional materials may be required of the applicant such as site plans, elevations, or floor plans. The Building Official shall inform the applicant of any extra materials required.

# CONSTRUCTION BOARD OF ADJUSTMENTS & APPEALS

## VARIANCE REQUEST FORM

The following specific variation from the ordinance or technical codes is requested:

*Please see detail on attached pages. Thank you.*

This variance is necessary due to the following special conditions and circumstances:

The above stated special conditions and circumstances do not result from the action or inaction of the applicant by virtue of the following fact(s):

Granting this variance will not confer any special any special privilege that is denied by the technical codes to other buildings, structures, or service systems by virtue of the following fact(s):

This request is the minimum variance that will make possible the reasonable use of the building, structure, or service system by virtue of the following fact(s):

This variance will be in harmony with the with the general intent an purpose of the technical codes and will not be detrimental to the public health, safety and welfare by virtue of the following fact(s):

*The applicant has prepared this application and certifies that the facts stated herein and exhibits attached hereto are true, correct and complete.*

*Randy Lauer* Pastor + Board President

Signature and Title

*4/2/2015*

Date

**Responses to Construction Board of Adjustments and Appeals Variance Application**  
**Fellowship Church, The Next Step Project**

**Action Requested**

Fellowship Church is requesting a variance for their "Next Step Project" Building (an office/multiuse facility) from the existing College Station adopted IECC 2012 Table C403.3.1 (1) requiring economizers on all units over 2.5 tons. An economizer is a "duct and damper arrangement and automatic control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling during mild or cold weather".

The INTENT of the code is to use this capability to reduce energy consumption on days where the weather is not humid or is cold.

**Applicable Ordinance Section**

Please reference 2012 IECC Table C403.3.1(1)

**The following specific variation from the ordinance or technical code is requested:**

Fellowship Church is seeking an exemption from the economizer requirement based on the fact that the design of the facility has already made significant measurable efforts to reduce and conserve energy use, far beyond the intent of this code requirement, and far beyond the capability of the method allowed by the code, which is to install an economizer on each unit over 2.5 tons.

**This variance is necessary due to the following special conditions and circumstances:**

Fellowship Church is seeking this variance because the cost of each energy savings element in the project has been carefully weighed up to this point, and accepted/denied based on what the return for the investment would be for the church both from a financial standpoint and from the standpoint of stewardship toward the environment.

One of the strategies to reduce the energy use, based on the nature of the use of the building, was to create multiple zones where the systems could be turned on/off for portions of the week when they may not be needed by staff. This zoning effort results in (11) separate units onsite. An economizer for these (11) units is quoted as \$28,000. The investment of these economizers, which has been considered by the design team as well as a separate Mechanical engineer NOT part of the team, would not pay off in any reasonable time frame when considering the lack of non-humid, cold days in Texas Zone 2A (College Station). Nearby Texas Zone 2B (surrounding area of Houston) has done away with the requirement for this very reason.

Only a very short time ago, "energy saving efforts" seemed complex and largely not understandable by the general public. Today however, these efforts are easily measurable and can be explained simply to any person interested in learning more. In our area of Texas, being able to strategically turn a system on

and off for several days of the week will yield far more energy savings than waiting for a device based on a non-humid, colder day (largely unpredictable in our area). These devices have been known to cause moisture problems in this area, and are largely lacking the research necessary to implement such an investment in this area (see Attachments 3A, 3B).

Alternatively, re-orienting the building to avoid solar gain (such as what has been done at Fellowship) confronts this problem head-on by avoiding heat coming into the building before it happens, thereby reducing the strain on the equipment at the onset (See Attachment 4: Instead of orienting the new building toward Colgate, the Fellowship Building is oriented according to the sun's path to avoid solar gain).

**The above stated special conditions and circumstances do not result from the action or inaction of the applicant by virtue of the following fact(s):**

All facts stated above reference the design and construction of the facility.

**Granting this variance will not confer any special privilege that is denied by the technical codes to other buildings, structures, or services systems by virtue of the following facts(s):**

This particular project is unique in (3) ways:

1. A significant, measureable amount of energy savings is taking place with regard to the building (well in excess of the amount of energy savings which could be expected by the addition of these economizers). See attached list of energy saving measures already in place (Attachment 1). This is not to be confused with "obtaining a LEED certificate", because the church is not pursuing this. The USGBC template was used only to demonstrate the number of energy saving efforts put into action by the church and design team (See attachment 1)
2. The energy savings efforts put into place, as demonstrated by the statements from Mechanical Engineers both a part and totally separate from the design team, are efforts which will yield more savings with respect to energy than the addition of an economizer on each unit. While an economizer on a unit can at best provide some energy savings several days per year, these efforts are integral to the design and provide relief from energy consumption every day, regardless of whether the building is in full use. These particular efforts are listed on Attachment 1, but here are the most measureable points:
  - a. Orienting the building based on sun path calculations, to avoid as much solar gain as possible into the building
  - b. Proper, custom designed shading on each individual building façade and low-e, tinted windows to further block solar gain into the building
  - c. Controllability of HVAC systems: 11 zones divided by usage groups of the building, with several degrees of controllability for each user group once the unit in the Zone has been turned on (see Attachment 2).

3. The usage patterns of this particular building are such that certain areas of the building will be used possibly 24 hours per day, while others may be used weekly or biweekly, and others 8am-5pm during the work week. The organization of the (11) mechanical zones in the building are designed for maximum energy efficiency such that only areas needed by the users will be used. Because this zoning strategy is necessary for energy savings and monthly operating cost savings to the facility, the requirement of the economizers is multiplied in this case by 11.

This request is the minimum variance that will make possible the reasonable use of the building, structure, or service system by virtue of the following facts:

Fellowship is seeking an exemption from this requirement because the intent of the code, which is to “reduce or eliminate the need for mechanical cooling” has already been met well in excess of the purchase of these devices. It is the position of the professionals on the design team that the effort to reorient the building addresses the intent of this code DAILY, whereas the purchase of the economizer devices may reduce the need for mechanical cooling on a totally sporadic basis, given the nature of the weather in Zone 2A and the fact that not all areas of the building are used at the same times.

This variance will be in harmony with the general intents and purposes of the technical codes and will not be detrimental to the public health, safety and welfare by virtue of the following facts:

This building is a great example of the general intents and purposes of this technical code, which is to conserve energy by reducing the burden on mechanical equipment. The team has gone to great length to conserve energy without buying into “fads” or non-proven strategies, and all of the strategies implemented are measurable and proven. There is no danger to the public health, safety and welfare at risk by use or nonuse of an economizer device.

**Whereas the intent of the code is to reduce energy consumption on non-humid or cold days, the actual design of the zones and building structure will reduce energy consumption every day of the year.**



# LEED for New Construction v2009

Registered Project Checklist

# Fellowship Church

## Sustainable Sites

Possible Points: 26

Y	N	?	Prereq	Description	Points
1			Prereq 1	Construction Activity Pollution Prevention	1
1			Credit 1	Site Selection	5
1			Credit 2	Development Density and Community Connectivity	1
1			Credit 3	Brownfield Redevelopment	1
1			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
1			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
1			Credit 4.4	Alternative Transportation—Parking Capacity	2
1			Credit 5.1	Site Development—Protect or Restore Habitat	1
1			Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1

## Water Efficiency

Possible Points: 10

Y	N	?	Prereq	Description	Points
2			Prereq 1	Water Use Reduction—20% Reduction	2 to 4
2			Credit 1	Water Efficient Landscaping	2
2			Credit 2	Innovative Wastewater Technologies	2 to 4
2			Credit 3	Water Use Reduction	2 to 4

## Energy and Atmosphere

Possible Points: 35

Y	N	?	Prereq	Description	Points
5			Prereq 1	Fundamental Commissioning of Building Energy Systems	5
5			Prereq 2	Minimum Energy Performance	5
5			Prereq 3	Fundamental Refrigerant Management	5
5			Credit 1	Optimize Energy Performance	1 to 19
5			Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
3			Credit 5	Measurement and Verification	3
2			Credit 6	Green Power	2

## Materials and Resources

Possible Points: 14

Y	N	?	Prereq	Description	Points
1			Prereq 1	Storage and Collection of Recyclables	1
1			Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
1			Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
1			Credit 3	Materials Reuse	1 to 2

## Materials and Resources, Continued

Y	N	?	Credit	Description	Points
1			Credit 4	Recycled Content	1 to 2
1			Credit 5	Regional Materials	1 to 2
1			Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

## Indoor Environmental Quality

Possible Points: 15

Y	N	?	Prereq	Description	Points
1			Prereq 1	Minimum Indoor Air Quality Performance	1
1			Prereq 2	Environmental Tobacco Smoke (ETS) Control	1
1			Credit 1	Outdoor Air Delivery Monitoring	1
1			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

## Innovation and Design Process

Possible Points: 6

Y	N	?	Credit	Description	Points
1			Credit 1.1	Innovation in Design: Specific Title	1
1			Credit 1.2	Innovation in Design: Specific Title	1
1			Credit 1.3	Innovation in Design: Specific Title	1
1			Credit 1.4	Innovation in Design: Specific Title	1
1			Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

## Regional Priority Credits

Possible Points: 4

Y	N	?	Credit	Description	Points
1			Credit 1.1	Regional Priority: Specific Credit	1
1			Credit 1.2	Regional Priority: Specific Credit	1
1			Credit 1.3	Regional Priority: Specific Credit	1
1			Credit 1.4	Regional Priority: Specific Credit	1

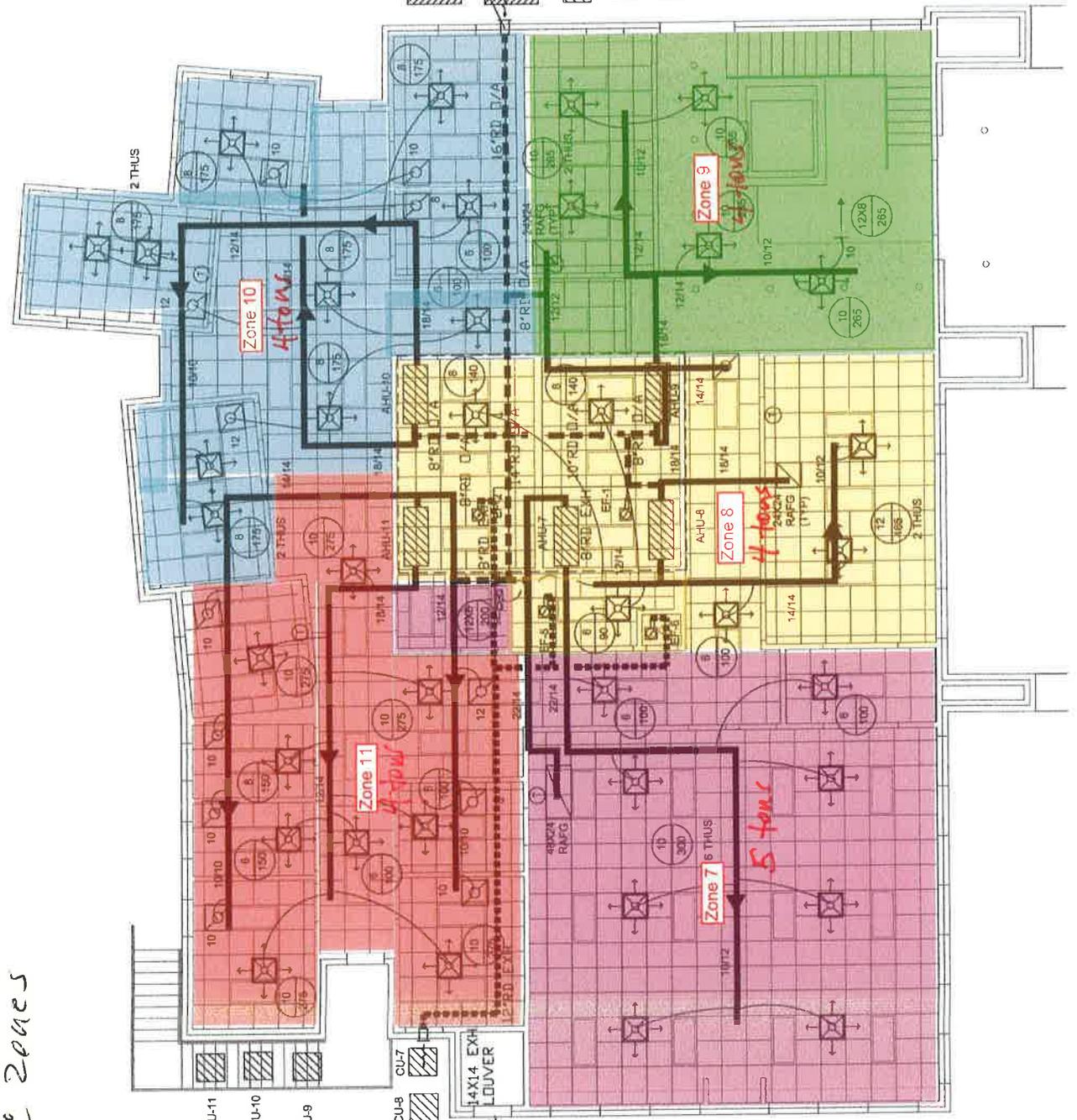
**Total** Possible Points: 110

# Attachment 2 - First Floor

## HVAC Zones

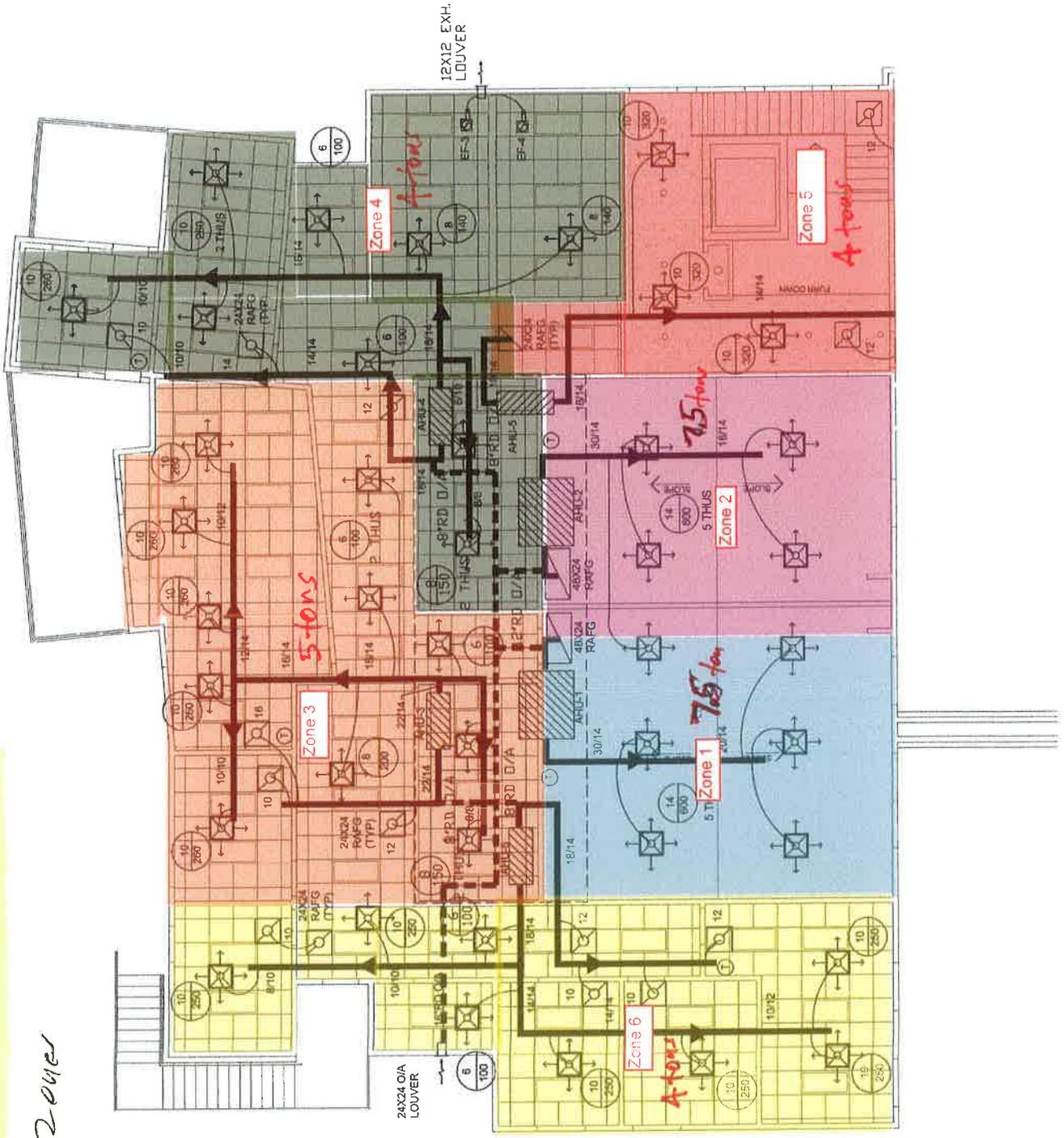
- 11 Missions staff CU-11
- 10 Pastor + Admin. CU-10
- 9 Lobby CU-9
- 8 Conf + Restrooms CU-8
- 7 Classroom or flex office CU-7

- CU-1 1 - Large meeting B
- CU-2 2 - Large meeting A
- CU-3 3 - Campus staff
- CU-4 4 - Break room + Restrooms
- CU-5 5 - Upper lobby
- CU-6 6 - Campus staff



NOTE: ALL RETURN AIR GRILLES ARE FILTER GRILLES (RAFG), REGARDLESS OF NECK DESIGNATION (SQ. OR RD.)

Attachment 2 - Second Floor  
 HVAC Zones



NOTE: ALL RETURN AIR GRILLES ARE FILTER GRILLES (RAFG), REGARDLESS OF NECK DESIGNATION (SQ. OR RD.)

Attachment 2  
HVAC Equipment

Tons of AC

EQUIPMENT SCHEDULE

MARK	DESCRIPTION	TYPE	MFR	MODEL	FAN		COOLING				HEATING			ELEC			NOTE	
					CFM	TESHP	NOM TONS	D/A CFM	GS45TH MBH	EDS MBH	EV/AMB	MBB IN	MBH OUT	KV	V	PH		MCA
CJ-1,2	CONDENSING UNIT	AIR COOLED	LENNOX	TSA090S4S			7.5								208	3		
AHU-1,2	AIR HANDLER	HORIZ	LENNOX	TAA090S4D			3000	0.5	600	65	90	80	67	95	15	208	3	
CJ-4,6,8-11	CONDENSING UNIT	AIR COOLED	LENNOX	TSA048S4			4								208	3		
AHU-4,6,8-11	AIR HANDLER	HORIZ	LENNOX	CBX32M-048			1600	0.5	4	200	35	48	80	67	10	208	3	
CJ-3,7	CONDENSING UNIT	AIR COOLED	LENNOX	TSA060S4			5								208	3		
AHU-3,7	AIR HANDLER	HORIZ	LENNOX	CBX32M-060			2000	0.5	250	42	60	80	67	95	10	208	3	
EF-1,4	EXHAUST FAN	CLG. MTD.	BROAN	L-150			150	0.2							115	1		1
EF-5,6	EXHAUST FAN	CLG. MTD.	BROAN	L-100			100	0.2							115	1		1

NOTES:  
1. VENT TO OUTSIDE

Zones 1, 2, 3, 6, 7 will be used least often. (Large meeting spaces and campus ministry staff)

Attachment 3A

**H.M. (Milt) McLeod, P.E.**

Business Phone (cell): (713) 806-1646 / Mailing: 5231 Calle Cordoba, Houston, Texas 77007 /  
Meetings/Deliveries: 4727 Merwin, Suite B, Houston, Texas 77027 / Fax: (713) 961-5691  
Ranch: 5904 Old Yoakum Road, Cuero, Texas / Mailing: P.O. Box 681, Cuero, Texas 77954

November 4, 2014

RE: Requirement to use Economizers

Ken,

Regarding our response to the City of College Station, I do not recommend the economizer. This requirement is waived in Houston. Economizers should not be used because of the high humidity of our location.

In addition, HVAC manufacturers seem not to have a good Economizer approach for split systems in the lower tonnage range. I've asked Lennox to research the problem, but at this point, I recommend against this approach due to moisture issues.

Please speak to the City of College Station regarding this issue.

HM (Milt) McLeod, PE

### **Attachment 3B, Opinion of Mechanical Expert**

This email is an excerpt from Joel Huggins, PE to Rodger Lewis, Pastor at Fellowship Church on 3/13/2015. Joel Huggins is a professional HVAC engineer working in Houston, and his engineering degrees are from MIT. Mr. Huggins formerly lived in College Station and worked as an energy auditor and AC system specification writer for TAMU and University Clients. He can be reached at 832-458-8631.

This individual's opinion was requested regarding this issue because he is NOT a member of the design team or the church.

"You and Milt are correct. Economizer units are tricky to maintain and really only designed for large buildings and rented commercial spaces. It really is just a small mixing box with a damper, but operating that damper is the devil's detail. The humidity in BCS is such that you'd need to keep the coil extra cold to dry out the air on those "prime days" (which are really only mornings). The humidistats that control that function are temperamental, expensive, and prone to failure.

I think you should seek an exemption. I would be happy to attest to the fact as an HVAC PE, if needed. I only recommend economizers in systems where you have an Energy Management Control System (EMCS) or if it's a large building with a central unit of say 30 tons or more.

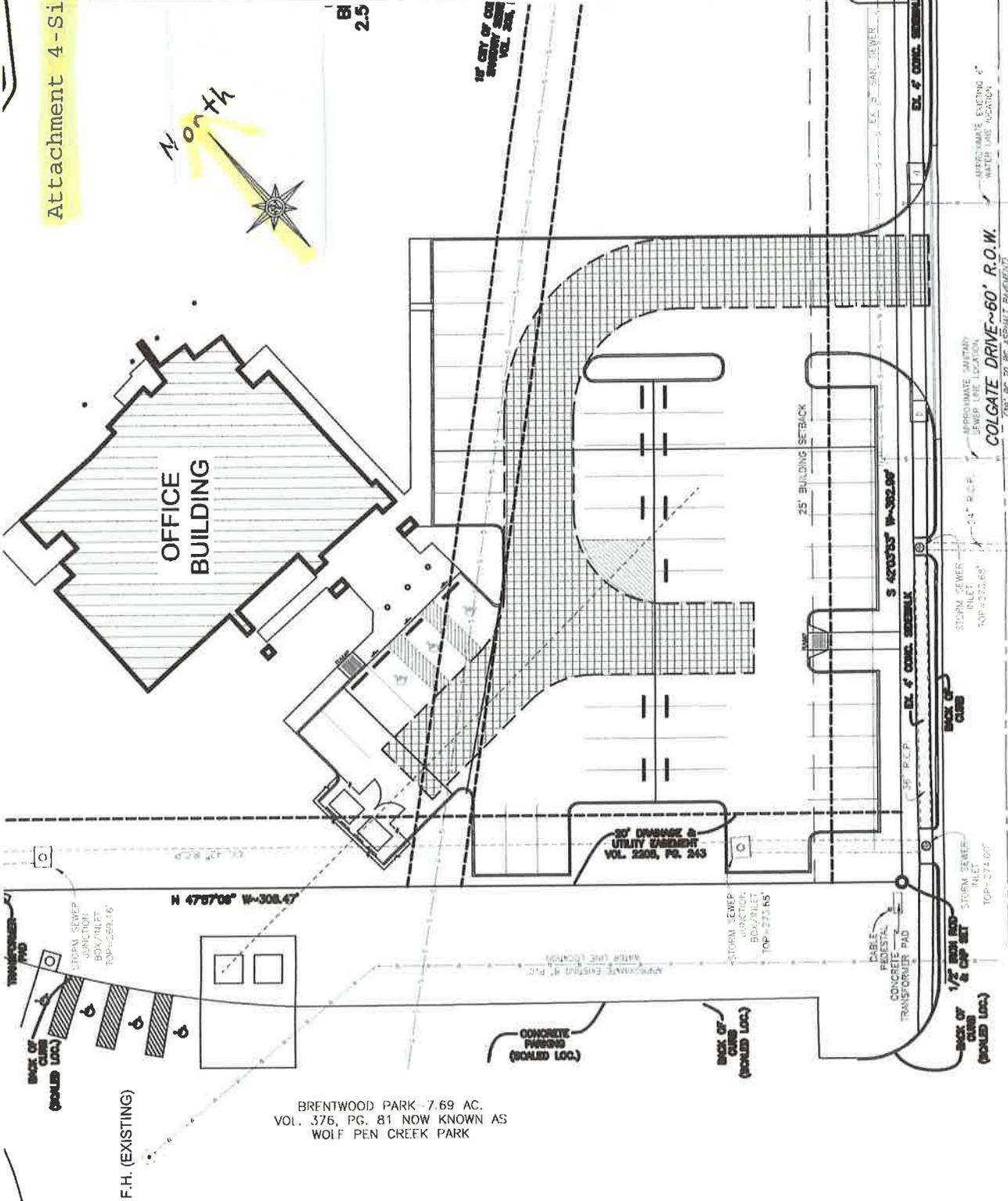
Joel Huggins, P.E."



Attachment 4-Site Plan

BURCH GROUP  
ARCHITECTS

FELLOWSHIP CHURCH  
The Next Step Project, Phase I  
1001 Colgate Drive  
College Station, Texas 77840



F.H. (EXISTING)

BRENTWOOD PARK - 7.69 AC.  
VOL. 376, PG. 81 NOW KNOWN AS  
WOLF PEN CREEK PARK

50 TOTAL PARKING SPACES  
REQUIRED FIRE LANE