EXECUTIVE SUMMARY

SOUND MITIGATION IN DOWNTOWN AREA

February 7, 2013

City Council Resolution 20111215-060

Directed staff to develop recommendations on improvements to the Land Development Code and Technical Codes to address sound mitigation for construction of new residential dwelling units and other uses with overnight guests, such as hotels, in the downtown area.

Goal - Create a reasonable guide for developers to reduce noise in the built environment.

- **Simple** - Create reasonable construction design standards.
- **Affordable** - Additional cost impact for development should not discourage future economical residential development.
- **Effective** - New sound mitigation requirements must improve the quality of life for occupants.

Process - The following issues are described in detail in this report.

1. STAKEHOLDER MEETINGS – Sound Mitigation

- Held 4 Stakeholder meetings

  March 28, 2012
  April 23, 2012
  June 7, 2012
  July 12, 2012

- The areas of concern and discussion:

  1. Current regulations in the Land Development Code and exterior structural components in the Technical Codes?

  2. The area on which this ordinance will be enforced?

  3. Which measuring standard to use?
     (STC, OINIC, dBA, dBC)

  4. Policy and noise information from other cities?

  5. Possibility of adopting HUD Standards?

  6. The cost impact for new development and affordable housing?

  7. Possible Exemptions
     (facing away, interior bedroom layout, hotels, affordable housing)

  8. Final Staff Proposal and Ordinance language

2. WHAT LAWS ARE CURRENTLY IN PLACE FOR AUSTIN?

CITY CODE

1) **Austin Noise Ordinance - Chapter 9-2 Noise and Amplified Sound**

§ 9-2-4 RESTRICTION ON DECIBEL LEVEL.

A person may not operate sound equipment at a business that produces sound:

(1) in excess of 85 decibels between 10:00 a.m. and 2:00 a.m., as measured at the property line of the business; or

(2) is audible at the property line of the business between 2:00 a.m. and 10:00 a.m.

§ 9-2-5 RESTRICTION ON USE OF SOUND EQUIPMENT IN A RESIDENTIAL AREA.

(A) This section applies to property zoned as residential under Section 25-2-32 (B) (*Zoning Districts and Map Codes*).

(B) A person may not use sound equipment that produces sound audible beyond the property line of a residence in a residential area between 10:00 p.m. and 10:00 a.m.

(C) A person may not use sound equipment audible beyond the property line of a residence in a residential area that produces sound in excess of 75 decibels.

Source: 1992 Code Section 10-5-5; Ord. 031023-13; Ord. 031211-11.

LAND DEVELOPMENT CODE – TECHNICAL CODES

1) **Austin adopted an airport overlay**, City Code Chapter 25-12, Article 1, Division 2. § 25-12-11 "Noise Reduction Measures For Certain Airport Compatible Land Uses"
   - Airport Overlay prescribes building requirements to achieve a minimum outdoor-to-indoor noise level reduction of 25 decibels and 30 decibels for exterior walls.
   - Provides specific construction requirements for exterior wall components.

2) **Austin adopted the 2009 International Building Code**
   - Construction Design Standards, Section 1207 Sound Transmission:
   - Provides requirements for Air-borne sound and Structure-borne sound mitigation.
   - Applies to interior walls, partitions and floor/ceiling assemblies between dwelling units and adjacent public areas such as halls, corridors, stairs or service areas that have a Sound Transmission Class (STC) of not less than 50 (45 if field tested).
   - However – there is No requirement for exterior wall assemblies.
   - This standard has been around since the 1960's.

3) **Austin adopted the 2009 International Energy Code (Green Building)**
   - Group R projects in downtown Austin area

   Recent projects located in CBD and DMU areas with the installation of Glass units consists of:
   - Low-e 1" thick assemblies with insulating glass.
   - ¼" glass- ½" airspace- ¼" glass.
   - Green Building techniques currently result in an average STC rating of 35 in downtown structures.

3. RESEARCH and PUBLIC POLICY SUPPORTING NOISE REDUCTION

What are other Cities and State's doing to reduce noise?

a. General Noise Mitigation Plans – Majority of medium to large U.S. cities have implemented noise mitigation plans to reduce noise generated by airports and freeways.

b. Most cities have developed inter-city specific plans to reduce noise generated by construction trucks and equipment, garbage trucks, and other noise disturbances, such as New York. These plans generally control noise during certain hours of the day and measure with maximum decibels levels.

c. A few cities have developed an entertainment type district where music is more prevalent due to numerous nightclubs and bars. However very few cities have built residential high-rises within their entertainment district, such as Austin.

1) New York
- New York provides noise control guidelines for nightclubs, restaurants and bars, which includes acoustic product information, in order to control noise levels leaving their premises.
- Commercial establishments may not to exceed 42 decibels as measured from inside nearby residences, and 7 decibels over the ambient sound level, as measured on a street or public right-of-way 15 feet or more from the source, between 10:00 pm and 7:00 am. (New York Noise Control Code, §24-231 Commercial Music, adopted in 2005).

2) California
- Adopted the California Environmental Quality Act (CEQA); and
- Adopted the California Noise Insulation Standards (California Code, Title 24), which establishes an interior noise standard of 45 dBA for Multiple Unit Residential and Hotel/Motel structures. Acoustical studies must be prepared for proposed structures showing the ability to meet the guidelines for existing and future noise levels and demonstrates that the design of the building will reduce interior noise to 45 dBA.

3) Portland
- Adopted a goal of achieving not more than 45 dBA of sound in the interior of building and requires sound insulation in all new structures in certain zones in the city.
- Portland also requires that this standard be met in remodeling projects that exceed 75% of the building value.
- Portland also offers density bonuses for multifamily units using certain sound insulation techniques.

4) Washington State – Washington State, as well as other cities, has adopted a matrix approach with "sending" and "receiving" areas, with decibel limits established for both the sound originator and the receiver.

For example, "commercial" as the source of noise, and "residential" as the receiver, the maximum decibel level is 57 dBA. These levels are all reduced by 10 decibels at night, which is 45 for residential.

SOURCE	RECEIVER		
	Residential	Commercial	Industrial
Residential	55	57	60
Commercial	57	60	65
Industrial	60	65	70

4) Denver, CO - Denver also adopted a matrix approach, but also includes a maximum "surge" level.

SOURCE	RECEIVER					
Denver (in dBA)	Residential		Commercial		Industrial	
	7am-10pm	10pm-7am	7am-10pm	10pm-7am	7am-10pm	10pm-7am
Residential	55	50	65	60	80	75
Commercial	55	50	65	60	80	75
(Surge level)	(60)	(60)	-	-	-	-
Industrial	55	50	65	60	80	75
(Surge level)	(65)	(65)	-	-	-	-

5) San Francisco- In Jan. 2009 San Francisco supplemented their noise regulation, which uses the dBA scale, by adding the Decibel-C (dBC) scale to measure the lower frequency of noise. The ordinance has a limit of 8 dBC above ambient levels outside the entertainment venue.

What Cities are using or considering "Construction Design Standards"?

A few cities or states have adopted construction design standards to control noise.

1) California
- Adopted the California State Building Code and requires "Construction Design Standards" to have a maximum interior noise received level at or below 45 dBA. (An engineering analysis is required).
- California codes also discourages residential units in areas with ambient noise levels exceeding 65 dBA.

2) Portland
- Adopted a similar standard to California with a maximum interior noise level of 45 dBA. Also require noise insulation in ALL new structures in certain zones, and remodel projects exceeding 75% of building value.

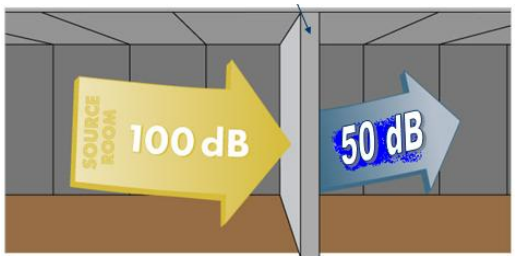
4. ISSUES DISCUSSED WITH STAKEHOLDERS

1st PROPOSAL - Enhance interior wall assemblies for sleeping areas.

A. Question: What Sound Transmission Standard(s) to use for interior sleeping units?

a) **STC** (Sound Transmission Class) – is an integer rating of how well a building partition attenuates airborne sound. In the USA, it is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations (see ASTM International Classification E413 and E90). E90 is a lab test standard for attenuation through a wall configuration, which would confirm the STC rating prior to construction.

Wall with an STC of 50



b) **OINIC** (Outdoor to Inside Noise Isolation Class) An alternative measurement that can be field tested under the ASTM E966 standard, and used for traffic noise.

c) **dBA** (Decibel) –Decibel means sound pressure level as measured by a sound level meter using the "A" weighting network and the slow meter response as specified by the American National Standards Institute. (City Code § 9-2-1 Definitions).

B. Question: What is involved in achieving an STC of 50?

1) Adding Mass

The weight or thickness of a partition is the major factor in its ability to block sound. For example, a thick concrete wall will block more sound than a thin gypsum/2x4 wall. Mass is commonly added to existing walls by adding layers of mass loaded vinyl and or additional layers of gypsum. When the mass of a barrier is doubled, the isolation quality (or STC rating) increases by approximately 5 dBA, which is clearly noticeable. Base frequencies (40-250Hz range) require mass to effectively mitigate their effect. See Ratings chart below.

Table 1 Glazing STC Ratings

Glazing System	STC Rating
Monolithic	
1/8" thick solid glass	STC-30
1/4" thick solid glass	STC-31
1/2" thick solid glass	STC-36
Laminated	
1/4" laminated glass	STC-35
3/8" laminated glass	STC-36
1/2" laminated glass	STC-38
3/4" laminated glass	STC-41
Insulating	
1/8" glass - 1/4" air space - 1/8" glass	STC-28
1/8" glass - 3/8" air space - 1/8" glass	STC-31
1/4" glass - 1/2" air space - 1/4" glass	STC-35
1/4" glass - 1" air space - 1/4" glass	STC-37
1/4" glass - 4" air space - 3/16" glass *	STC-51
Laminated Insulating	
1/4" laminated - 1/2" air space - 1/4" glass	STC-39
1/4" laminated - 1" air space - 3/16" glass	STC-42
1/4" laminated - 2" air space - 3/16" glass *	STC-45
1/4" laminated - 4" air space - 3/16" glass *	STC-48
Double Laminated Insulating	
1/4" laminated - 1/2" air - 1/4" laminated	STC-42
1/4" laminated - 8" air - 1/4" laminated *	STC-49
1/2" laminated - 4" air - 1/4" laminated *	STC-51
1/2" laminated - 8" air - 1/4" laminated *	STC-56

* perimeter lined with acoustical material

The above information has been reviewed and is believed to be accurate, howev

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Bellevue, WA 98004 (206) 454-4823

2) Construction Techniques - Laminate

The weight or thickness of a partition is the major factor in its ability to block sound.

Acoustical Performance of Glass and Wall Constructions

	Overall Thickness	Inside	Construction Space	Outside	STC Value
Laminated-Insulating Glass	1" (26.1 mm)	1/4" laminate	1/2", Air	1/4"	39
	15/16" (24.6 mm)	1/4" laminate	1/2", Air	3/16"	39
	1-1/8" (29.3 mm)	3/8" laminate	1/2", Air	1/4"	40
	1-7/16" (37.3 mm)	1/4" laminate	1", Air	3/16"	42
	2-7/16" (62.7 mm)	1/4" laminate	2", Air	3/16"	45
	4-1/2" (113.5 mm)	1/4" laminate	4", Air	3/16"	48
	4-5/8" (119.1 mm)	1/2" laminate	4", Air	3/16"	49
	1" (27.9 mm)	1/4" laminate	1/2", Air	1/4" laminate	42
	4-3/4" (120.7 mm)	1/2" laminate	4", Air	1/4" laminate	51

Source: Arch Aluminum & Glass Co.,Inc. Your True Single Source®

STC Ratings Chart

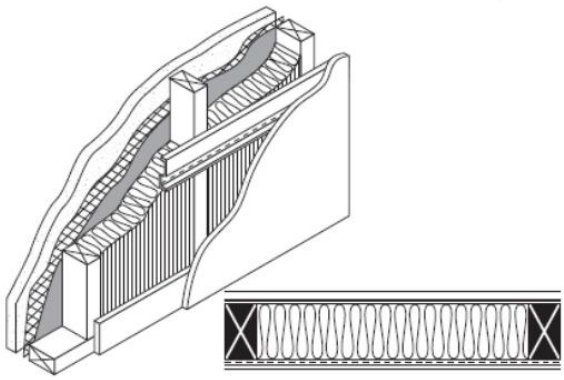
3) Construction Techniques – Walls

Increasing or Adding Air Space within a partition can also help to increase sound isolation. The airspace can be increased or added to an existing partition. A common way to add an airspace is with resilient channels and a layer of gypsum. An airspace of 1 ½" will improve the STC by approximately 3 dB. An air space of 3" will improve the STC by approximately 6 dB. An airspace of 6" will improve the STC by approximately 8 dB.

Adding Sound Absorptive Material in the Partition can be installed inside of a partition's air space to further increase its STC rating. Installing insulation within a wall or floor/ceiling cavity will improve the STC rating by about 4-6 dB, which is clearly noticeable. It is important to note that often times, specialty insulations do not perform any better than standard batt insulation.

Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings.

STC-57 (Figure 20)

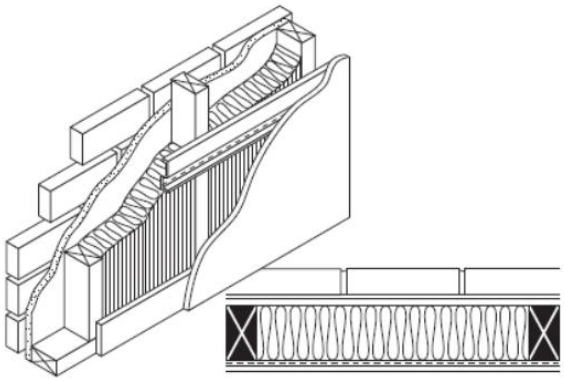


Exterior ⅞" stucco, 1" woven mesh and no.15 felt paper and, 2x4 studs, 16" o.c., resilient channel, ½" gypsum board, one thickness (3½"- 4") fiber glass batt insulation.

Fire Rating - NR

Variation	Construction	STC	Fire Rating
20A	*No insulation*	49	NR
20B	*No resilient channel* (3½"-4") fiber glass batt	46	NR

STC-58 (Figure 21)



Exterior brick veneer, ½" air space, ¾" insulative sheathing, 2x4 studs, 16" o.c., resilient channel, ½" gypsum board, one thickness (3½"- 4") fiber glass batt insulation.

Fire Rating - NR

Variation	Construction	STC	Fire Rating
21A	*No insulation*	54	NR
21B	*No resilient channel* (3½"-4") fiber glass batt	56	NR

Source: NAIMA North American Insulation Manufacturers Association

5. **How will the exterior wall be inspected?** Exterior wall assemblies must be inspected by an approved third party to verify compliance with the STC rating submitted with the construction documents and design. A final letter of approval by a Professional certified by INCE (Institute of Noise Control Engineering) or a member in good standing of NCAC (National Council of Acoustical Consultants) must be submitted to the COA Building Inspector prior to Final Building Inspection.

C. Question: Should the City consider designating a geographical area?

The Music Office proposed creation of a Downtown Entertainment District that would be defined as the geographic radius around the five music districts as an area of four city blocks (1500 feet). These five districts include East 6th St. and the Warehouse Entertainment districts, in addition to Rainey St., W. 6th St. and the Red River Music Heritage district. The Downtown Entertainment District will be within the CBD and the DMU.

D. Possible Exemptions:

Configuration – S*ome residential structures could be exempt based on configuration relative to the sound source.*

1. Group R structures that are shielded from the sound source by facing away the sound source (Downtown Entertainment District).

2. Group R structures configured with sleeping units(s) to the interior of the residence and protected from the noise source by interior and exterior walls.

Smart Housing structures – *Consider residential structures that include a component of Smart Housing.*

3. Group R structures that include a component of Smart Housing must comply with HUD standards.

E. Cost Impacts

1) Building plans with building facing away from noise.
   - *Minimal cost impact – only design change for developers*

2) Building plans with interior sleeping room configuration.
   - *Minimal cost impact – only design change for developers*

3) If Neither A nor B, then building construction techniques for sleeping area's must result in sound reduction compliant with new code amendment.
   - *Cost impact – Enhanced construction techniques for noise reduction.*
   - *Possible requirement of Engineers' letter submitted with building plans confirming compliance.*
   - *Possible requirement of 3rd Party Acoustical Test submitted before Final Inspection.*

ALTERNATE PROPOSAL –Adopt the HUD Standards.

HUD Standards – 24 CFR Part 51 Environmental Criteria and Standards, SubPart B

The Housing and Urban Development Department (HUD) provides a minimum national standard for noise reduction for communities. http://www.hud.gov/

Sec. 51.101 General policy.
a. It is HUD's general policy to provide minimum national standards applicable to HUD programs to protect citizens against excessive noise in their communities and places of residence.

1. Planning assistance. HUD requires that grantees give adequate consideration to noise exposures and sources of noise as an integral part of the urban environment when HUD assistance is provided for planning purposes, as follows:
   i. Particular emphasis shall be placed on the importance of compatible land use planning in relation to airports, highways and other sources of high noise.
   ii. Applicants shall take into consideration HUD environmental standards impacting the use of land.

Subpart B – Noise Abatement and Control (attached as addendum)
Sec. 51.100 Purpose and authority.
a. It is the purpose of this subpart B to:

1. Call attention to the threat of noise pollution;
2. Encourage the control of noise at its source in cooperation with other Federal departments and agencies;
3. Encourage land use patterns for housing and other noise sensitive urban needs that will provide a suitable separation between them and major noise sources;
4. Generally prohibit HUD support for new construction of noise sensitive uses on sites having unacceptable noise exposure;
5. Provide policy on the use of structural and other noise attenuation measures where needed; and
6. Provide policy to guide implementation of various HUD programs.

Impact on Austin – The HUD Policy has a limitation of 65 dBA. Since Austin's noise ordinance allows up to 85 dBA, then any HUD construction would not qualify. Therefore, staff does not recommend adopting the HUD Standards.

FINAL PROPOSAL – Enhance exterior structural components.

LAMINATED GLASS REQUIREMENT

Although the current Council resolution does not include buildings outside of the general downtown area, staff is suggesting that all structures built in this jurisdiction comply with these requirements for the future development of Austin as buildings over five stories in height continue to be developed downtown and outside of the downtown area.

The new proposed code amendment mandates laminated glass. This code amendment will affect future projects more than five stories above grade. It will meet all requirements of the resolution at varying degrees, plus adds the needed protection of glass breakage and potential falling glass from buildings with glass windows and glass balcony panels. This requirement will only be pertinent to buildings above five stories, and built in accordance with the 2012 International Building Code as proposed. The City of Austin is currently under the 2009 International Building Code.

The code amendment proposal also addresses the following requirements:

- Provides additional sound mitigation more stringent than the current code.
- Provides additional needed safety factor from possible breakage of glass at higher levels than five stories.
- Will not impact Smart Housing projects.
- Eliminates the cost of additional engineering not currently required.
- Eliminates the need for the cost of additional third party inspections not currently required.
- Creates equitability for all structures built in Austin's jurisdiction above five stories.

This code amendment will provide an additional safety factor from possible breakage of glass from high rises above five stories, as well as providing an equitable approach for all stakeholders. The solution provides additional noise control from outside sources into the built environment.

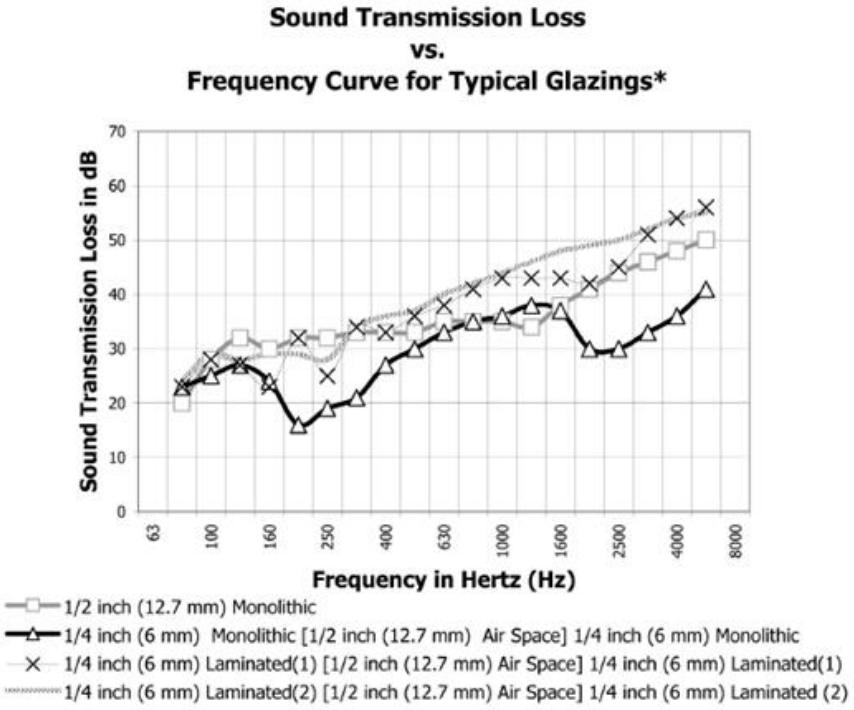
The following is staff's recommendation to create a noise mitigation technical code amendment for all structures exceeding five stories. During the first 3 stakeholder meetings there were many concerns expressed by downtown business owners, developers, and organizations. Those issues and concerns that were discussed repeatedly included cost, equitability, and affordability. Staff believes this recommendation addresses those issues and concerns.

THE FOLLOWING QUESTIONS WERE RESEARCHED FOR THIS PROPOSAL.

1. What is the effective sound transference level between safety glass and laminated glass?
    a. Laminated architectural glass is an effective barrier to unwanted noise.
    b. The ability of laminated architectural glass to reduce sound energy is referred to as the Sound Transmission Loss (STL). It is expressed in decibels (dB) and measured at specific frequencies, ranging from 80 to 5,000 Hz. STL is dependent on the mass, stiffness, and damping characteristics of a glazing material. While it is not practical to

increase glass stiffness, it is possible to increase glass and interlayer thickness to improve STL performance.

c. Generally, laminated architectural glass (2-ply or 3-ply) reduces sound transmission over a wide frequency range depending on glass and interlayer thickness.
d. Laminated glass in an insulating glass configuration can reduce sound transmission more dramatically and over a much wider frequency range depending on glass and air space thickness.
e. We have included a graph comparing the STL of 1 inch insulating glass and ½ inch monolithic glass. All three glass configurations have approximately the same surface weight but the double laminated configuration provides significantly higher sound transmission loss.



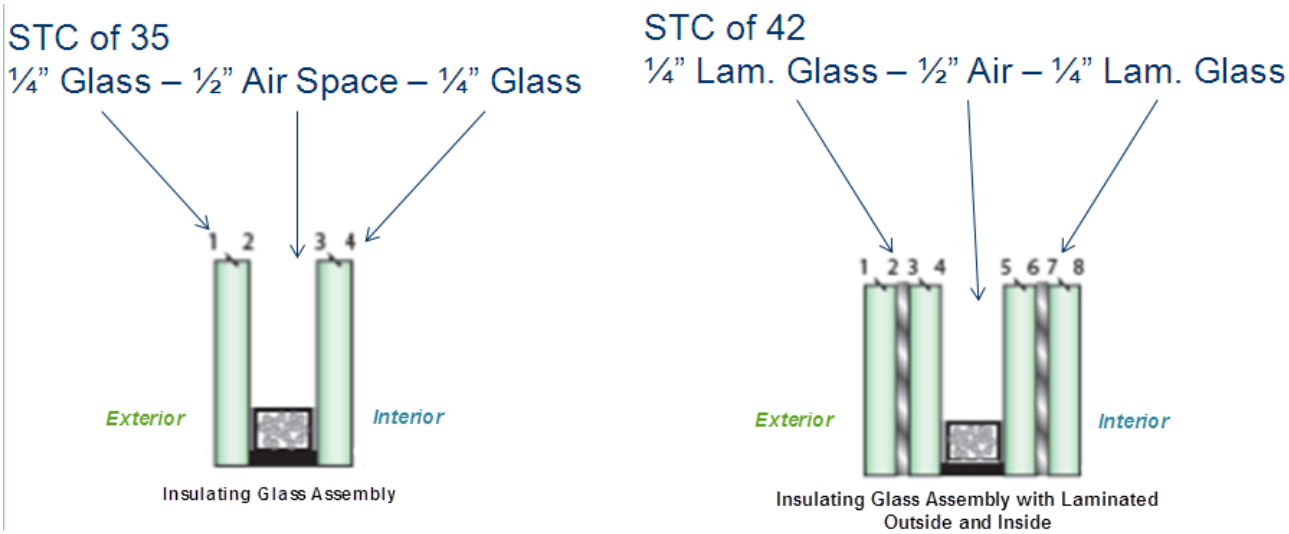
*Information provided by Solutia Inc. The data and information set forth are based on samples tested and are not guaranteed for all samples or applications.

(1) 1/8 inch glass – 0.030 inch Standard PVB – 1/8 inch glass
(3 mm glass – 0.76 mm Standard PVB – 3 mm glass)

(2) 1/8 inch glass – 0.030 inch Acoustic PVB – 1/8 inch glass
(3 mm glass – 0.76 mm Acoustic PVB – 3 mm glass)

f. The following diagrams indicate how laminated glass assemblies improve the STC rating.

Safety Glass can have a STC rating of <u>35</u> using
¼" Glass – ½" Air Space – ¼" Glass
Laminated safety glass can have a STC rating of <u>42</u> using
¼" Lam. Glass – ½" Air Space – ¼" Lam. Glass.



g. In exterior applications, acoustical performance is determined by testing in accordance of ASTM E 1425 *Practice for Determining the Acoustical Performance of Exterior Windows and Doors* and classified according to ASTM E 1332 *Standard Classification for Determination of Outdoor-Indoor Transmission Class (OITC).*Laminated glass and insulating glass tend to produce higher OITC ratings because the laminate dampens vibration and the air space limits sound transmission.

2. <u>What are the safety advantages of laminated glass over safety glass</u>?
   a. Laminated glass resists glass fall-out from windborne projectiles in hurricane-prone areas.
   b. Laminated glass can provide retention of the glass if broken and therefore allow replacement for the glazing when convenient while possibly eliminating the potential for fall through of people and objects.
   c. Laminated architectural glass can provide various levels of security protection, including protection from break-ins, blast resistance, seismic resistance and bullet resistance.
   d. Laminated glass can provide retention of the glass if broken and therefore allow replacement for the glazing when convenient while possibly eliminating the potential for fall through of people and objects.

3. What is the U-values and SHGC (Solar Heat Gain Co-efficient) of laminated glass over safety glass?
    a. Laminated glass can reduce solar energy transmission, control glare, and screen out ultraviolet (UV) light. In the Austin area, this is required by the Energy Code, so the lower the SHGC of the glass the better performance. By using a tinted interlayer, tinted or coated glass/glazing, solar transmission will be reduced without increasing nominal glazing thickness. Laminated architectural glass can be combined into insulating units for greater thermal performance.

4. Provide cost information of a general cost comparison between safety glass and laminated glass.

    According to RSMeans Building Construction Cost Data, the in-place costs for different types of glass vary quite a bit and are as follows (national averages):
    - Float glass (untempered): $12 to $64 per square foot
    - Float glass (tempered): $14 to $70 per square foot
    - Laminated glass: $23 to $211 per square foot
    - Wired glass: $22 to $30 per square foot
    - Coated glass: $15 to $80 per square foot
    - Mirrors: $17 to $27 per square foot

5. Laminated glass will eliminate falling glass from high rises.

    - June 2012 Ontario – Residential high-rise windows.
    - March 2012 Calgary – Downtown Apartment high-rise windows.
    - October 2011 Austin - Austonian high-rise condominiums windows.
    - October 2011 Chicago – Loyola University high-rise windows.
    - September 2011 Seattle –Four Seasons Hotel 18th floor windows.
    - August 2011 Sarasota – Office building high-rise windows.
    - August 2011 Toronto – Murano Tower high-rise condo balcony panels.
    - June 2011 Austin - W Austin Hotel & Residence balcony panels.
    - May 2011 Atlanta – W Hotel woman fell through a 10 story window.
    - October 2007 Brisbane – Waterfront Place high-rise 23rd floor windows.
    - August 2004 Chicago – Apartment high-rise, window washer broke windows.
    - May 1988 Los Angeles – 62 story Interstate Bank Building (towering inferno).
    - August 1983 Houston – High winds break high-rise windows.

    In 2010-2011 Canada experienced 30 incidents of breaking windows and balcony panels, with 11 incidents occurring in Toronto.

    Laminated glass video available: http://www.youtube.com/watch?v=qbIZjJ-7yYQ.

6. Impacts.

    - There is no impact to affordable housing. Only applies to buildings above 5 stories.

5. PROPOSED DRAFT ORDINANCE

PART 1. A new Section 2410 is added to **§ 25-12-1** of the Local Amendments of the Building Code to read:

ARTICLE 1. BUILDING CODE.

§ 25-12-1 Section 2410, Glazing on Group R buildings above 5 stories in height.

2410.1 Glazing on Group R buildings above 5 stories in height. Glazing exposed to the exterior and used as part of a curtain wall assembly, window and/or guardrail located on buildings that are over 5 stories in height must be laminated with two or more glass plies of equal thickness and the same glass type on all floors where Group R occupancies are located. Laminated glass shall comply with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1.

Section 2410.2 Loads. The panels shall be designed to withstand the loads and comply with the requirements of Section 2404 (*WIND, SNOW, SEISMIC AND DEAD LOADS ON GLASS).*

PART 2. Effective Date: _____, 20xx

6. BOARD & COMMISSION SUMMARY

The following Boards and Commissions reviewed the draft code amendment

Building & Fire Code Board of Appeals

- January 25, 2012 – Preliminary discussion for structural solutions included;

Music Commission

- May 10, 2012 - Preliminary discussion on noise mitigation in downtown area.
- August 6, 2012 – Commission supported staff recommendation by unanimous vote 6-0.
  Recommendation:
  "Spearman moved for the Music Commission to support the recommendation from the building standards staff as it moves through the boards and commissions process so that other boards and commissions see that building standards have the support of the Music Commission. Spies concur, adding that the STC, safety and energy concerns are sufficient enough for support. Wagner seconds, motion passes unanimously, 6-0".

Design Commission

- August 27, 2012 - Board supported laminated glass solution but would like staff to also look at the source of noise. Commission recommendation below:
  Recommendation:

August 27, 2012

Dear Mayor Leffingwell, Mayor Pro-Tem Cole, and City Council Members,

We have reviewed the recommendations by Staff regarding sound mitigation for Downtown regarding music venues. The study is in the right direction, however, the single detail solution at the sound reception end only begins to touch upon the greater problem and solutions. There are two parts to the solution….the *source* and the *reception*. Both parts need be considered and recommendations to both need to be made. To begin, both sides need to agree upon an acceptable public noise level at the property lines. Performance detailing can then be created to achieve it.

Mitigation of the sound at the source would benefit the current and future residents of downtown. We begin by limiting decibels and sound frequency ranges at the property line to bring it down to that of other similar cities. We understand that simply turning down the volume may not be acceptable to some as it may alter the ambiance of the venues. For those, they can try to maintain the original volume and frequencies but mitigate its release thru design. Because recommendations at the receiving end entails considering construction detailing, it would not be out of line to ask the same of those at the sound source. A wealth of information, products and details are available to begin mitigating this and need to be considered…some at a greater fiscal cost than others. An effort needs to be made to study this. A venue recently came before us which began to incorporate this, so the principles are not new.

Mitigation of sound at the reception for future construction can be addressed in a multitude of ways. The building skin's articulation can begin to deflect and diffuse the sound and choice of materials can begin to absorb it. Because this is based upon configurations and choices, cost may not necessarily be more, especially if sound was further mitigated at the source. Besides the laminated glass recommended by Staff, a multitude of enhancements can be done in the wall assembly. Choice of studs, insulation type, additional caulking, stud configuration, and sound isolation glues are some of the typical standard details used to limit sound transfer. Final performance standards, however, should not alter the variety of character currently achievable by designers. By having sufficient available detailing options, this can be balanced.

For existing construction, besides mitigation at the source and retrofitting a laminated glass window, which is not fiscally realistic, there needs to be achievable retro-fit ideas available for those most sensitive to the noise. Most likely there will be a cost attributed to this, however each situation is different and acceptable levels differ per individual. Some retro-fit details include glass films, drapes, and adding a layer of isolated sheetrock with isolation glue. Recommendations need to be studied for this instance since it affects the current population which sparked the study.

We appreciate the opportunity to comment on this study, however, there is not enough information to provided support for the current proposal. Staff has done a fine job in the study, in bringing stakeholders together, and in bringing attention to the large problem at hand. Our commission is composed of professionals who have designed to deal with issues such as this and can be available to assist in further recommendations.

Sincerely,

James Shieh

Chair, Design Commission

Downtown Commission

- September 19, 2012 – Not recommended by the Commission.

Planning Commission

- October 9, 2012 – Briefing to the Planning Commission.

Downtown Austin Alliance

- October 29, 2012 – Recommended by the Downtown Austin Alliance. (see attached letter).

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DOWNTOWN AUSTIN ALLIANCE

Preserving and Enhancing the Value and Vitality of Downtown Austin

October 29, 2012

City of Austin Building and Fire Code Board of Appeals:

As you know, many downtown stakeholders have been meeting with City staff over the past several months concerning a proposed building code amendment related to music or sounds that may interrupt the sleep of downtown residents and visitors. Based on our discussions, we suggest changing other Austin regulations that are more appropriate than changing the building code.

We appreciate the simplicity of the staff proposal, but because the data shows that the laminated glass solution is not very effective at mitigating lower (bass) frequencies, and because our City of Austin Sound Ordinance does not regulate bass-level frequencies, we do not believe that this proposal will truly mitigate sound in new construction. Additionally, it will not help any of our existing 10,000 downtown residents or 6,000 nightly hotel guests.

We believe that sound ordinance regulations are a more appropriate area for change, rather than new construction building code standards for residential buildings, for several reasons:

1. **We don't want to write regulations that make downtown residential and hotel development more difficult and cost prohibitive. The Downtown Austin Plan and Imagine Austin each call for more people living in downtown.**
2. **The City can be helpful in suggesting that new downtown projects implement sound mitigation measures. If the developers don't mitigate, they may suffer financially. For example, the Downtown Commission has begun asking questions about new downtown development that may have opportunities for appropriate sound mitigation.**
3. **We may be measuring sound and noise in a way that prevents us from mitigating impacts on residents and guests, and this might require a different regulatory approach.**
4. **There may be ways to regulate live music differently than recorded music that could promote our live music goals.**

Thank you for the opportunity to speak to you about our concerns last week. When you vote on this proposal, please consider the cost impact of the proposal, whether it will be effective at mitigating sound, and our existing residents and visitors who are affected by not limiting bass frequencies in our current Sound Ordinance.

Sincerely,

Pamela Power, Chair

<u>Building & Fire Code Board of Appeals</u> (Technical Board)

- February 7, 2013 Public Hearing - Staff provided a final briefing and recommendations from the previous Commissions, as well as, the letter from the Downtown Austin Alliance. The Board made a motion to not support staff's recommendation. The motion failed for lack of quorum.
- **<u>RECA (Real Estate Council of Austin)</u>** – Not recommended by RECA at first Public Hearing by B&FC Board of Appeals Dec. 19, 2012. (see attached letter).

RECA
REAL ESTATE COUNCIL
OF AUSTIN

December 19, 2012

City of Austin Building and Fire Code Board of Appeals
Austin City Hall
301 W. 2nd Street
Austin, TX 78701

Dear Board Members,

Downtown stakeholders, including The Real Estate Council of Austin (RECA), have been meeting over the last several months in response to the Austin City Council resolution regarding sound mitigation. As you know, Downtown music and related noise have given rise to complaints of disruption and interrupted sleep from residents and hotel guests. RECA wishes to share with you feedback regarding the proposed sound mitigation ordinance as presented to several boards and commissions, including this body, throughout fall 2012:

A new Section 2410 is added to **§ 25-12-3** of the Local Amendments of the Building Code to read:

ARTICLE 1. BUILDING CODE.
§ 25-12-3 Section 2410, LOCAL AMENDMENTS TO THE BUILDING CODE.

2410.1 Glazing located above 5 stories in height. Glazing exposed to the exterior and used as part of a curtain wall assembly, window and/or guardrail located over 5 stories in height from surrounding grade must be laminated with two or more glass plies of equal thickness and the same glass type. Laminated glass shall comply with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1.

2410.1.1 Loads. The panels shall be designed to withstand the loads and comply with the requirements of Section 2404 (*WIND, SNOW, SEISMIC AND DEAD LOADS ON GLASS).*

RECA advocates that the code amendment process be halted. The sound problem, serious though it is, can be adequately addressed through the existing noise ordinance and other avenues. It is not necessary to change the building code, as is currently recommended by City staff, or to amend the land development code. Market forces will continue to compel developers to mitigate sound; it is in the developers' interest to make adjustments, such as possibly using laminated glass as is currently recommended, for the financial viability of their projects. Additional code regulation will make development in Downtown Austin more challenging than it already is, thus thwarting the goal of increased density and livability as described in the Imagine Austin Comprehensive Plan for this part of Austin.

RECA advocates for a balanced approach to mitigating sound disturbance that addresses the sound source as well as the receiving space. That being said, RECA is committed to live music in Austin, Texas, as demonstrated by our organization's and members' philanthropy and community involvement. By advocating for source solutions, we do not aim to diminish the live music scene. Also, it should be noted that recorded music is as much of a culprit as is general "spill over" noise. To the end that we want to see live music thrive, RECA supports the expansion of the music venue assistance loan program to help venues make improvements that control noise levels. Additionally, RECA would like to see a change in the way sound is measured. Instead of using only an A weight measurement, RECA recommends that a C weight measurement be included as well to better capture bass, the primary source of music-related complaints.

Like the Downtown Austin Alliance (DAA), RECA suggests the formation of a working group to present recommendations to Council. This group would include representatives from the City of Austin Downtown Commission, Planning Commission, Music Commission, and Design Commission as well as community groups such as DAA, the Downtown Austin Neighborhood Association, Austin Hotel and Lodging Association, RECA, and other stakeholders. RECA would like to see this group move forward with forming recommendations for Council in 2013, rather than working through the code adoption process to address the problem.

Thank you for your consideration of these comments and this request. Should you have any questions, please do not hesitate to contact RECA staff member Annie Armbrust at 512-320-4151 or aarmbrust@recaonline.com. RECA Board members, volunteers, and staff look forward to being part of the on-going dialogue on this important issue.

Sincerely,

Scott Flack
President