



Today's
Changing
Spaces

TOTAL[®] ACOUSTICS

Armstrong[®]
CEILING & WALL SOLUTIONS

TOTAL Acoustics® Ceilings

...provide the ideal combination of sound absorption and sound blocking. Together these attributes help you create quiet spaces. So whether you are:

- de-densifying
- building temporary offices
- reducing noise in open spaces
- ensuring speech privacy

...get total noise control and design flexibility with Total Acoustics® ceiling panels across our portfolio.



4

STANDARDS/CHANGING SPACES



6

PUTTING SOUND BLOCKING TO THE TEST



10

PLACES TO WORK



12

PLACES TO LEARN



14

PLACES TO HEAL









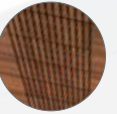



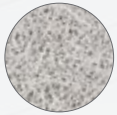
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CEILING SOLUTIONS FOR EVERY SPACE

Good, Better, Best recommendations make it easy to choose the right ceiling for the right space.




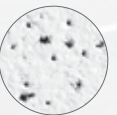
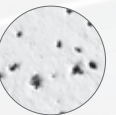
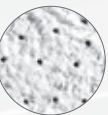





BEST

Total Acoustics = NRC 0.80+ and CAC 35+

							
AcoustiBuilt® Ceiling System	Calla® / Calla® High NRC Calla® High CAC Calla® Health Zone™ Calla® Shapes Calla® PrivAssure™ Calla® Health Zone™ AirAssure™	Lyra® PB High CAC	Ultima® / Ultima® Health Zone™ Ultima® High NRC	WoodWorks®* Tegular	WoodWorks®* Channeled Tegular	WoodWorks®* Grille Tegular	MetalWorks™* Tegular
			* Acoustics performance for these ceilings is determined by the product, perforation, and infill panel.				
MetalWorks™* 3D	Tectum® Tegular	Tectum® DesignArt™ – Lines Tegular					










BETTER

Total Acoustics = NRC 0.70-0.75 and CAC 35+

					
Calla® PrivAssure™	Ultima® Ultima® Shapes	Ultima® Health Zone™ Ultima® Health Zone™ AirAssure™	Fine Fissured™ High NRC	School Zone® Fine Fissured™ School Zone® Fine Fissured™ AirAssure™	Cirrus® / Cirrus® High NRC
					
WoodWorks® Tegular WoodWorks® Shapes	WoodWorks® Channeled Tegular	WoodWorks® Grille Tegular	MetalWorks™ Tegular	MetalWorks™ 3D	

GOOD

Total Acoustics = NRC 0.60-0.65 and CAC 35+

								
Canyon®	Mesa™	School Zone® Georgian™	Cirrus® Second Look®	Cirrus® Profiles	WoodWorks® Tegular	WoodWorks® Channeled Tegular	MetalWorks™ Tegular	MetalWorks™ Tin

NRC + CAC = Total Acoustics®



Total Acoustics®

It's All About STANDARDS

Total Acoustics® ceiling panels help provide the ideal combination of sound absorption and sound blocking.



- As sound absorption is increased, reverberation time is decreased. Reverberation times that are lower than 1.0 second are acceptable for speech intelligibility.

Sound absorption reduces noise while sound blocking keeps it from traveling into adjacent spaces.



- Sound absorption is measured using the ASTM C423 standard.
- Sound blocking through a ceiling is measured using the ASTM E1414 standard. Sound blocking through a wall is measured using the ASTM E90 standard.
- Sound isolation between spaces is measured using the ASTM E336 standard.

Together these attributes can help you create quiet spaces without needing to build walls to the deck.

Don't just take our word for it, our acoustics laboratory is NVLAP certified. Armstrong Ceilings' primary acoustics laboratory is committed to rigorous testing.

- The NVLAP program is administered through the National Institute of Standards and Technology (NIST), part of the U.S. Department of Commerce.
- It provides an unbiased third-party evaluation and recognition of performance.

UL® Classification labels verify the performance of our products.



TOTAL ACOUSTICS®
 Sound Absorption (NRC)
 + Sound Blocking (CAC)

Total Acoustics ceilings can help:



- reduce noise in open, unassigned spaces and keep noise from traveling into adjacent rooms
- create flexible environments for the changing nature of work and the workplace
- meet ANSI standards and design acoustically effective classrooms


- ANSI/ASA S12.60

- ensure speech privacy and meet FGI guidelines for healthcare spaces



- FGI Guidelines for Design and Construction of Hospitals





◀ ACOUSTIBuilt®
Seamless Acoustical
Ceiling System

GREAT ACOUSTICS by Design

Noise is still the number one
complaint in the workplace.
You can help solve it with
Total Acoustics® Ceilings.

Ideal Sound Performance for Every Space

Effectively Absorb & Block Sound

- No need for full height, floor-to-deck walls when you specify Total Acoustics® ceiling panels – making future space re-configurations easier.
- No need for extra plenum barriers.

Absorption is Not a Substitute for Blocking

- Ceiling panels with high sound absorption (NRC) and low sound blocking (CAC) are unable to provide the confidential speech privacy that Total Acoustics ceilings offer.

All Total Acoustics ceilings have a CAC of 35 or higher, the ideal value to deliver the sound blocking you need.

ABCs of Acoustical Design

- Absorb and Block sound with Total Acoustics high performance ceiling panels.
- Cover intruding noise with electronic sound masking.



SOUND MASKING
Integrated Solution Partner



FOCUS SPACES



COLLABORATIVE SPACES



CONFIDENTIAL SPACES

Putting SOUND BLOCKING to the Test



▲ Calla® Shapes for DesignFlex®

The Truth About Sound Blocking

- Total Acoustics® ceilings with a CAC of 35+ tested in real-world scenarios¹ have been proven to deliver confidential speech privacy.
- Ceiling panels with a low CAC (<35) are unable to achieve the sound blocking that Total Acoustics offers.

Ceiling CAC – Critical to Speech Privacy

- Real-world independent acoustical testing in common plenum shared offices confirms that high CAC Total Acoustics panels are essential to achieving speech privacy.
- Request a free custom Speech Privacy Report or a custom Reverberation Time Report. Our TechLine experts can help you get the right sound control for any type of space.

¹ Independent Acoustical Measurements and Report by Acentech Inc.

Why CAC Makes A Difference

Confidential
Speech Privacy
**NOT
ACHIEVED**

**NRC 0.90
CAC 22**

**HIGH NRC
CEILING PANELS**

Privacy Index* **82**

* Privacy Index calculation is
defined in ASTM E1130

Confidential
Speech Privacy
ACHIEVED

**NRC 0.75
CAC 35**

**ULTIMA®
CEILING PANELS**

Privacy Index* **97**



**TOTAL
ACOUSTICS®**
Sound Absorption (NRC)
+ Sound Blocking (CAC)

Field Test Parameters:

- Adjacent Offices (same size)
- Plenum (with no barrier)
- Common Wall (STC 35+)
- Concrete Deck
(with commercial carpeting)
- Sound masking level at 42 dBA

Total Acoustics®
ceiling solutions help
provide confidential
speech privacy.



▲ WoodWorks® Grille Tegular 24" x 24" panels with 2820 infill panels

MANAGE Office Buzz

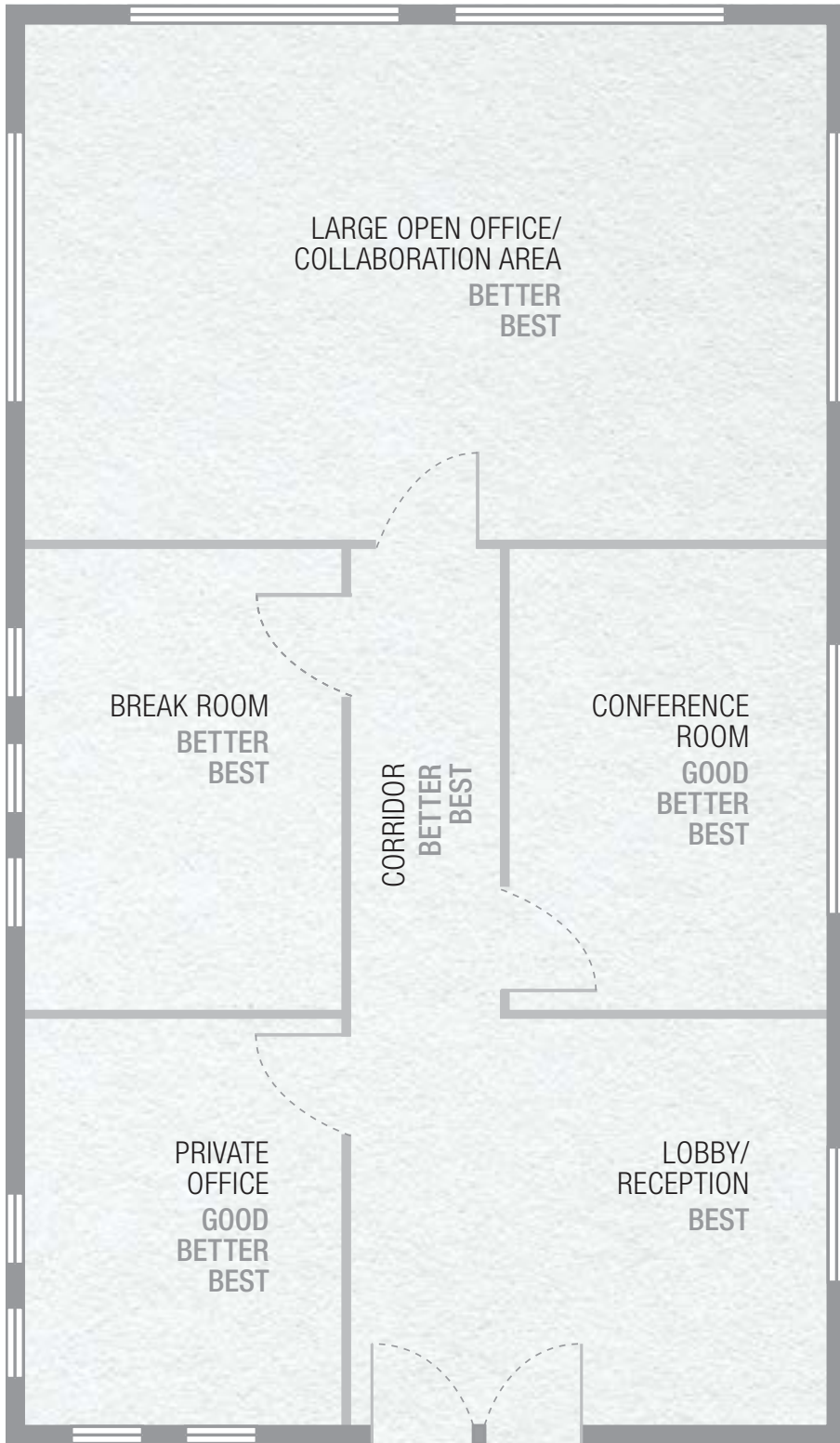
▼ Ultima® Square Lay-in 24" x 24" panels

Studies show that excessive noise reduces worker effectiveness, raises stress, and lowers employee satisfaction. The changing nature of work and workplaces call for concentration one minute, collaboration the next and more cleanable hard surfaces than ever before.

Today's open plan areas can become tomorrow's closed plan areas making both absorption (NRC) and blocking (CAC) important for future space flexibility.

Total Acoustics® ceilings not only address quiet concentration, energetic collaboration, and speech privacy in today's workplace, but can help create an optimal work environment.





BEST

NRC 0.80+ and CAC 35+

High traffic spaces or multiuse spaces where maximum sound absorption and sound blocking are needed to help keep noise levels down and prevent disruption to adjacent spaces.

BETTER

NRC 0.70-0.75 and CAC 35+

Spaces where strong sound absorption and sound blocking are needed for all-around acoustical performance.

GOOD

NRC 0.60-0.65 and CAC 35+

Spaces where less sound absorption is required but sound blocking is needed to maintain speech privacy between adjacent areas.

$$\begin{matrix} \text{NRC} \\ + \text{CAC} \\ = \text{Total Acoustics}^{\text{®}} \end{matrix}$$



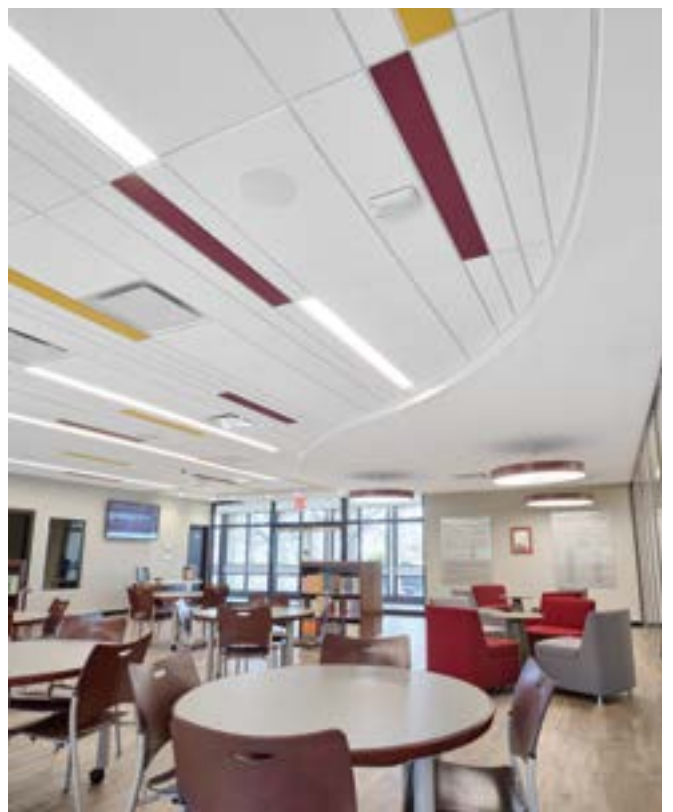
▲ Ultima® Tegular 24" x 24" panels on Prelude® 15/16" suspension system

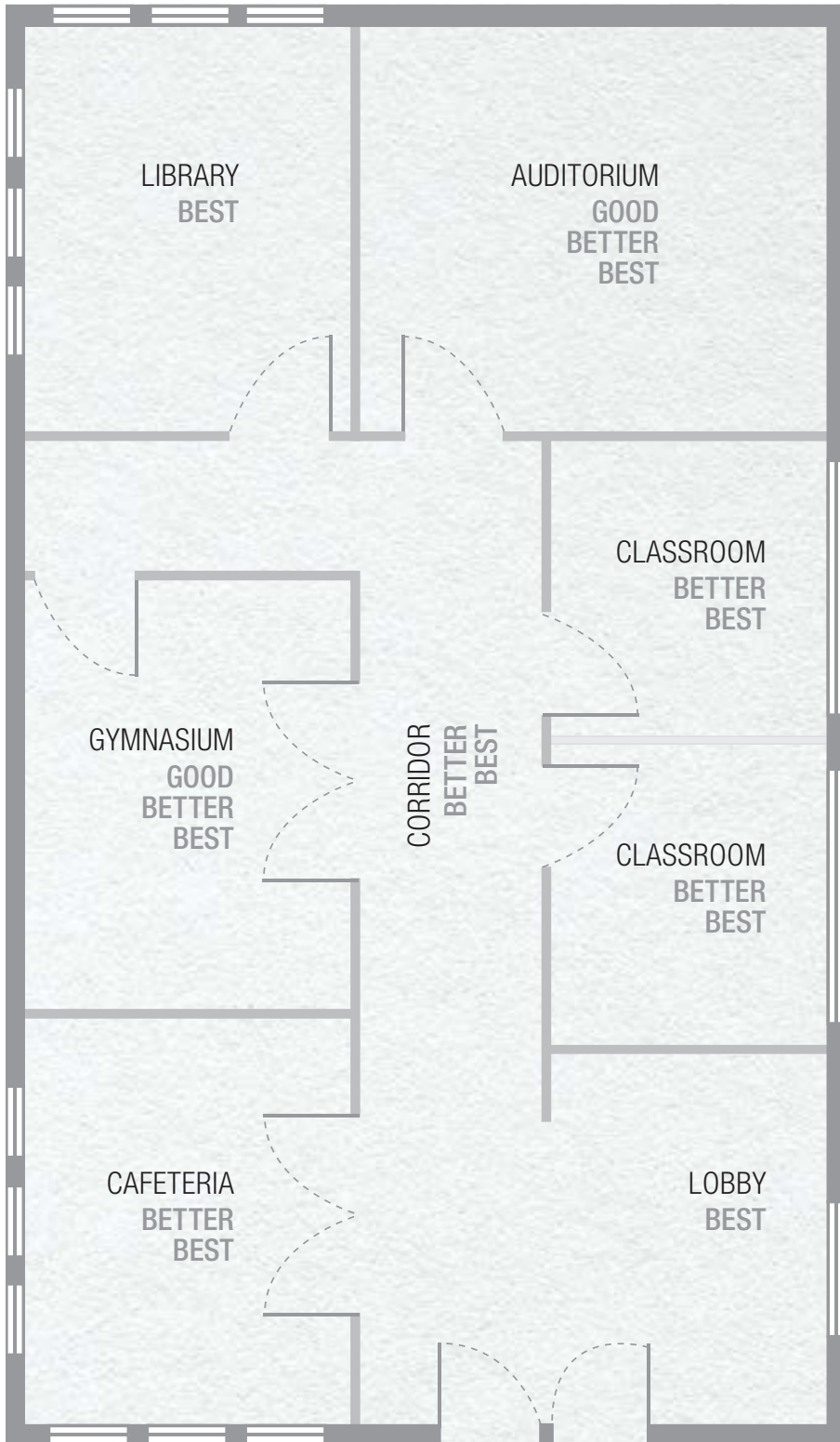
HUSH Booming Voices

Each day, thousands of students are unable to understand one out of every four spoken words in classrooms due to inadequate acoustical treatments.

With Total Acoustics® ceilings, you'll meet or exceed ANSI standards, contribute to LEED® points, and create a better place for teachers to teach and students to learn.

▼ Calla® Shapes for DesignFlex® with Suprafine® XL 9/16" suspension system





BEST

NRC 0.80+ and CAC 35+

High traffic spaces or multipurpose spaces where maximum sound absorption and sound blocking are needed to help keep noise levels down and prevent disruption to adjacent spaces so students can stay on task.

BETTER

NRC 0.70-0.75 and CAC 35+

Spaces where strong sound absorption and sound blocking are needed for all-around acoustical performance.

GOOD

NRC 0.60-0.65 and CAC 35+

Spaces where less sound absorption is required but sound blocking is needed to maintain privacy between adjacent areas.

$$\begin{array}{l} \text{NRC} \\ + \text{CAC} \\ = \text{Total Acoustics}^{\text{®}} \end{array}$$

CREATE Peaceful Privacy

Excessive noise in corridors, busy nurses' stations, and chaotic treatment rooms negatively affects patients – as well as interactions between doctors and staff.

Hospital noise still ranks lowest on HCAHPS scores. Total Acoustics® ceilings can help address that and HIPAA healthcare requirements, as well as aid in optimum patient recuperation.

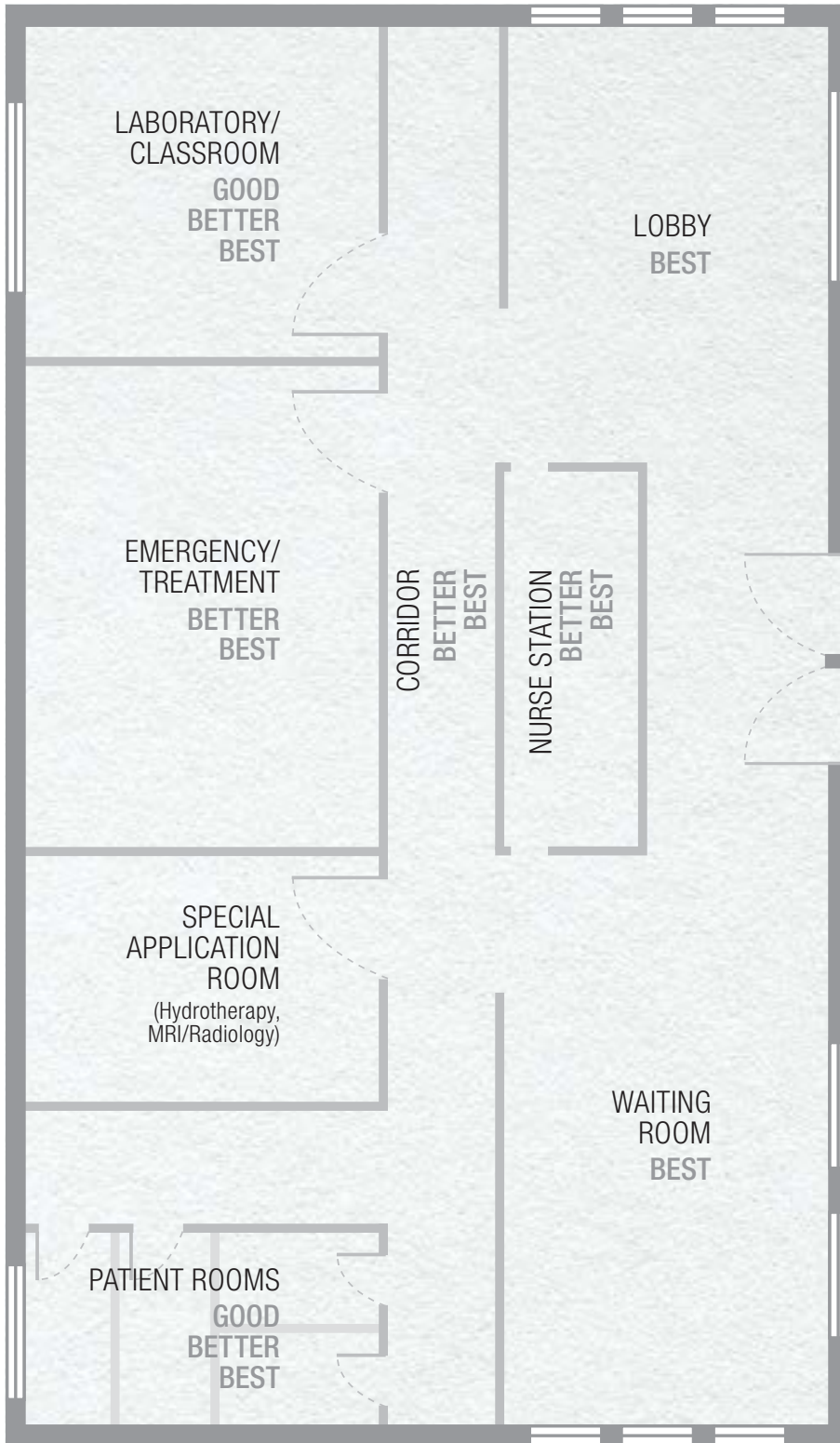
The ceiling plane is one of the single largest surfaces for integration of absorptive materials to offset the new noise that will be created by additional hard surfaces. Ceilings that can absorb and block sound will be able to do acoustical “heavy lifting” compared to other surfaces.



▲ Calla® Tegular ceiling panels

▼ Calla Tegular, MetalWorks™ Torsion Spring in Effects™ finish, Drywall Grid System with Axiom® Classic trim





BEST

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Our A Ceiling for Every Space® online tool lets you quickly click through installation photos to give you ideas and specific product recommendations.

You'll also be directed to the corresponding Total Acoustics® Performance information for your product selections.

Try it at:
armstrongceilings.com/everyspace



PLACES TO WORK



PLACES TO LEARN



CEILING SOLUTIONS for Every Space



▲ AcoustiBuilt Seamless Acoustical Ceiling System

New!

AcoustiBuilt® Seamless Acoustical Ceiling System



TOTAL ACOUSTICS®
 Sound Absorption (NRC)
 + Sound Blocking (CAC)

Looks like drywall in a seamless acoustical ceiling



PLACES TO HEAL



PLACES TO PLAY



PLACES TO GO



Contact us to find out more:
 1 877 276-7876
 Fax 1 800-572-TECH
 techline@armstrongceilings.com
 8 a.m. to 5:30 p.m. EST

Our TechLine service team can provide you with technical support for acoustic code compliance of ceilings with Total Acoustics® Performance:

- HIPAA, HCAHPS, ANSI
- Custom reverberation and privacy index calculation reports based on your project design

TechLine

TAKE THE NEXT STEP

1 877 276-7876

Customer Service Representatives
7:45 a.m. to 5:00 p.m. EST
Monday through Friday

TechLine – Custom reverberation and privacy index calculation reports, technical information, detail drawings, CAD design assistance, installation information, other technical services – 8 a.m. to 5:30 p.m. EST, Monday through Friday. FAX 1 800 572 8324 or email: techline@armstrongceilings.com

armstrongceilings.com/commercial

CEU – A New World of Acoustics
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Product literature and samples – express service or regular delivery
Contacts – reps, where to buy, who will install

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Detail drawings
Specifications
Planning and budgeting

Pre-construction Assistance

Layout drawings for standard and premium products
Project installation recommendations
Contractor installation assistance

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solutions center

helping to bring your one-of-a-kind ideas to life

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