

Industry:
Healthcare

Installation type:
New Construction

Products:
QuietRock® ES
QuietRock® ES Mold Resistant

Architect:
SmithGroup

General Contractor:
HerreroBoldt Partners



Customer Success Story
California Pacific Medical Center, San Francisco, CA

Integrated Project Delivery Team Creates **Low Cost, Quiet Solution** for San Francisco Hospital

California Pacific Medical Center, a Sutter Health affiliate, is constructing its new 274 bed hospital located in the Cathedral Hill District of San Francisco, situated between Van Ness and Geary. The CPMC Van Ness and Geary Campus, is the first of three top-of-the-line medical centers scheduled to be built in the heart of San Francisco. These next generation medical campuses are aimed to serve local neighborhoods by providing easier access to health care services. The new CPMC Van Ness and Geary hospital is organized around comprehensive centers of care rather than traditional departments, enhancing the delivery of patient care while improving space efficiencies, workflow and productivity. The CPMC Van Ness and Geary hospital building is designed to meet LEED certification and the attached medical office will meet LEED Silver certification.

Hospitals in general are noisy. Research has proven that a quiet hospital environment improves patient healing and medical staff satisfaction.¹ The noise from equipment, patient intake and discharge areas, nursing stations, and common areas plus the regulatory requirements for patient privacy, makes having rooms designed to mitigate utmost sound transmission a critical design. The General Contractor of HerreroBoldt Partners, Acoustical Consultants Shen Milsom and Wilke (SM&W), sub contractor California Drywall, Architect SmithGroup and PABCO® Gypsum worked together to design the most cost effective medical facility that met the noise requirements designed for the projects.



Productivity Analysis

Contractors, tested QuietRock® ES for ease of installation.



"QuietRock was brought to the project and received a thorough acoustical analysis from our project consultants. We found acceptable alternative details using QuietRock that met or exceeded the sound isolating industry standards i.e. Sound Transmission Class (STC) ratings using less gypsum board material. We look forward to seeing QuietRock installed in the field during project construction."

- Dennis Paoletti, Shen Milsom Wilke, LLC

Measuring the Acoustical Design Options

Certain walls within the hospital have specific noise control requirements that need to be achieved. The acoustical consultant on the project, Shen Milsom Wilke, wanted a more conservative design. After reviewing the QuietRock® product they requested an acoustic performance test of the walls by a NVLAP-accredited laboratory. Assemblies with multiple layers of standard type X and walls built with QuietRock® EZ-SNAP were tested in a controlled environment at Western Electro-Acoustic Laboratories (WEAL) for a fair and unbiased comparison.

Sound transmission between the rooms - the amount of noise that would pass between room based on the proposed wall assemblies was a concern to the team. The hospital has different acoustical requirements for the walls: STC 40, 45 and 50. STC 40 walls can easily be achieved using traditional building materials. QuietRock was reserved for use in walls where higher performance is required. STC 45 walls are used between patient rooms and walls between toilet rooms and public spaces.

STC 50 walls are specified in the following areas:

- Between a patient room and public space containing no door
- Partitions between an exam room and public space containing no door
- Partitions around consultation rooms
- Partitions between exam or treatment rooms
- Partitions between MRI rooms and public spaces

The initial STC 45 wall design specified the use of 3-layers of Type X gypsum and the STC 50 wall was designed to use 4-layers of Type X gypsum. However, a recent research study published in *Sound and Vibration* magazine indicates that 3 or 4 layers of gypsum may not be sufficient to achieve the required STC ratings for the hospital. The side-by-side testing performed at WEAL confirmed this assertion.

QuietRock® Meets & Exceeds STC Requirements:

Required STC 45 Wall		Required STC 50 Wall	
3 Layers Type X	1 Layer QuietRock ES	4 Layers Type X	2 Layers QuietRock ES
FAIL - STC 44	PASS - STC 49	FAIL - STC 47	PASS - STC 53
Construction: 16 gauge steel studs spaced 16" on center			

In this comparison, QuietRock® ES designs performed as well or better than multi-layer gypsum assemblies. QuietRock® ES proves to be the only tested wall assembly capable of achieving the sound requirements on heavy gauge steel stud construction.

More Options with EZ-SNAP

In addition to designing for noise the integrated team also needed to address mold concerns. Breathing mold contaminated air can cause severe health affects to hospital patients, personnel and visitors. Because the campus buildings are equipped with HVAC units and plumbing running through ceilings, which may increase the risk for mold growth, QuietRock® ES Mold Resistant is being used to treat areas above ceiling height. Places where mold is not a major concern, standard QuietRock® ES panels are being installed to reduce costs while maintaining STC performance.

Acoustic and Fire Design

Installing gypsum panels horizontally in a "railroad" fashion is becoming a more common practice as builders look for creative ways to manage cost on the job. This technique of lining up panels horizontally on either side of the studs is believed to cut labor costs and decrease production time tables. Many builders railroad panels in corridors so that ductwork penetrations in the plenum spaces can be addressed more efficiently. Similarly, healthcare facilities prefer a railroaded install to accommodate wiring, plumbing and other devices into headwall fixtures.

Not all gypsum products are approved for this type of an installation. QuietRock® has passed full fire and hose stream tests required for a railroad installation.

Choosing by Advantages: QuietRock® EZ-SNAP

Before any acoustic testing was done, Project Manager Matthew Boersma compared the costs of the gypsum walls to the walls built with QuietRock® ES. Together HerreroBoldt, SM&W, California Drywall, and SmithGroup decided to use QuietRock® ES based on a number of advantages.

- Replacing double layer of gypsum resulted in reduction of 101,339 ft² of gypsum delivered to the job site
- Reduced 13 truck deliveries to the job site
- Reduction of 178 carpenter man days on the job
- QuietRock® assemblies exceed the targeted STC rating
- Additional space due to fewer layers of gypsum for code required clearances
- Standard 7 ¼" door frame depth on 6" walls
- Reduction of drywall screw needed to build assemblies
- Reduction of multi-layer code inspections
- Reduction of 6 fewer 30yd dumpsters to remove gypsum scrap
- Increase livable space in the building by 1,300 square feet by replacing the multi-layered gypsum walls with QuietRock® ES

"After completing our analysis, it was clear that QuietRock ES would be the best solution to achieve the required STC performance, at the lowest cost, for the Cathedral Hill district campus. Additionally, using QuietRock ES standardizes the wall dimension and reduces variability for other in-wall systems like door frames and receptacle outlets."

- Matthew Boersma, HerreroBoldt Partners



Cathedral Hill Hospital

QuietRock® Benefits:

- Same or lower cost walls for required STC
- Maximize usable floor space
- Faster build time
- Less labor
- Less materials to stock and install
- Less overall job waste
- Less truck deliveries to the site
- Standardizes width of walls, door frames, utility boxes, wall switches and outlet boxes
- Simplifies architectural layout by using the same width walls throughout the facility



QuietRock® is Engineered to Meet & Exceed Design Goals for Healthcare Facilities

- Noise can increase heart rate, blood pressure, respiration rate, healing time and psychiatric symptoms.² QuietRock® meets and exceeds sound requirements in hospitals for more comfortable healing
- QuietRock® contributes to meeting HIPPA privacy and acoustic requirements
- QuietRock® 530RF isolates RF interference from sensitive equipment
- Offers less building material waste compared to traditional noise reducing wall assemblies
- Saves floor space compared to traditional noise reducing wall assemblies

QuietRock® Powered by EZ-SNAP: Low cost, true score & snap

QuietRock® products have been installed in leading healthcare facilities and hospitals including:

Stanford Hospital
Palo Alto, CA

Sutter Health, St. Lukes Campus
San Francisco, CA

Valley Medical Center
San Jose, CA

South Calgary Health Campus,
Calgary, AB, Canada

Tacoma General Hospital,
Tacoma, WA

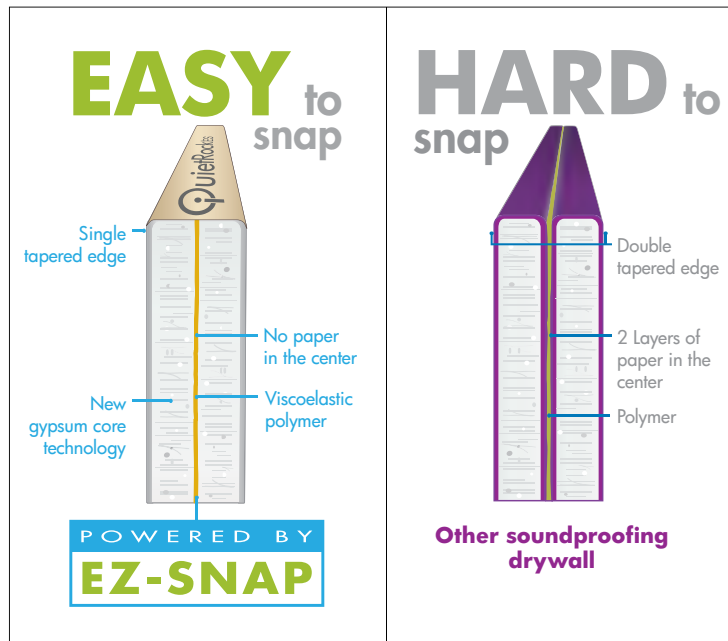
Presbyterian Hospital,
Albuquerque, NM

St. Mary's Hospital,
Lewiston, ME

Woodstock Hospital,
Toronto, ON, Canada

Comprehensive Sleep
Wellness Center,
Sevierville, TN

Women's Hospital, Health
Sciences Centre,
Winnipeg, MB, Canada



Other QuietRock® Solutions

QuietRock® 530RF



RF shielding & reduced sound transmission all-in-one

5/8"  

STC 48 and higher

QuietRock® 530



Impact & abuse resistant ideal for high-traffic areas

5/8"  

STC 49 and higher

QuietSeal® Pro & QuietPutty®



For use around wall parameter, in between panel joints, electrical outlets and more.

Call 1-800-797-8159

to consult with us on your particular acoustical requirements.

www.QuietRock.com

 **PABCO® Gypsum**
what the job demands™

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PN: 113-00034-021216

1. Michael R. Yanis, The Quiet Hospital HIPPA and AIA Standards help Control Noise, Improve Healing www.mcdmag.com/JanFeb2006/QuietHosp.pdf
2. Written by Waqar, Healing Environment: A Map Towards Patient Safety, <http://allnurses.com/nursing-articles/healing-environment-map-270775.html>