



Rob



George



Bob

SEEKING EXCELLENCE

Rob Hammon, George Burmeister and Bob Raymer talk about the Community Energy Efficiency Program. The first in a two-part series – page 6

THE CF-4R

The right form for third-party field verification – page 15

Questions and Answers

Residential

Q *I am installing a fan coil unit in the hallway of a multifamily dwelling unit in a space constructed of sheetrock. The sheetrocked space is formed by the original hallway ceiling at the top, the hallway sidewalls, and sheetrock across the bottom of the space with a return grill mounted in the bottom sheetrock. Does a duct have to be installed connecting the fan coil return to the return register?*

A This type of installation may be used only when a fan coil unit is installed in a sheetrocked space that is constructed and sealed to meet the California Building Code (CBC), Title 24, Part 2, Volume 1. Section 310.2.2 of the CBC states that walls and floors separating dwelling units in the same building "... shall not be of less than one-hour fire-resistance construction between two dwelling units." Section 709.3.2.2 of the CBC states that when fire-resistive floor or floor ceiling assemblies are required, voids and intersections of these assemblies "...shall be sealed with an approved material."

Also, Section 150 (m) of the Building Energy Efficiency Standards states, "Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air."

There are two acceptable methods of complying with Section 150 (m) for the fan coil

Pictured at the right: A fan coil unit before installation and two photos of construction details.



space that is the subject of the question:

1. A return duct is installed between the fan coil and the return register.
2. The builder demonstrates that the sheetrocked space in which the fan coil is installed is not a plenum. In this case the duct in method "1" is not required.

The California Mechanical Code has the following definition of a plenum: "PLENUM is an air compartment or chamber including uninhabited crawl spaces, areas above ceilings or below a floor, including air spaces below raised floors of computer/data processing centers, or attic spaces, to which one or more ducts are connected and which forms part of either the supply air, return air or exhaust air system, other than the occupied space being conditioned."

To demonstrate that the sheetrocked space in which the fan coil is installed is not a plenum, the builder must demonstrate that it is part of the conditioned space. This fan coil space can be considered part of the conditioned space if it is demonstrated that

- the space is within the building envelope, and
- air leakage pathways (e.g., infiltration connections to building cavities) are sealed so that the space is more connected to the inside of the envelope than to the outside of the envelope.

There are two ways of demonstrating that air leakage pathways are properly sealed:

1. Construct the fan coil space so that an inspector is able to visually determine that the space has no leakage paths. No testing is required for this approach. The inspector must be able to inspect all joints and seams in the sheetrock, particularly horizontal seams that are above and below the sheetrocked bottom of the space, and to verify that no horizontal seams are behind the sheetrocked bottom or the mounting supports for the sheetrocked bottom of the space. The supports for the sheetrocked bottom must

be mounted on the surface of the walls of the space and have sheetrock between the support and the wall framing.

Any horizontal seam in the wall-mounted sheetrock must be a minimum of 1/2 inch below the lower surface of the sheetrocked bottom. Also any horizontal seam in the wall of the space above the sheetrocked bottom must be a minimum of 1/2 inch above the top of the mounting wood or metal brackets. This spacing is required to allow adequate room for taping the seam. All vertical sheetrock seams must be taped and sealed with joint compound or equivalent prior to the installation of the wood or metal brackets that support the dropped ceiling.

All penetrations of this space, for example, refrigerant lines, water lines for hydronic heating, electrical (line voltage and low voltage) lines, sprinkler lines, and ducts, must be sealed with fire caulk or other approved sealing material as required by the building official.

Ductwork that penetrates the sheetrock must use a collar that goes entirely through the wall cavity. These collars must extend at least two inches past the sheetrock on each side of the wall cavity. The collars must then be sealed to the sheetrock on each side of the wall. The ducts must be attached and sealed to the collar.

2. Show that there is no air leakage pathway that is more connected to the outside than to the inside by testing the leakage of the sheetrocked space as though it were a duct. For this test, seal the space and test it with duct pressurization equipment at a pressure of 25 Pa. If the tested leakage from this space is 10 cubic feet per minute or less, then the space may be considered to have no substantial leakage to outside the conditioned space (effectively zero within the instrumentation accuracy). The results of this test must be reported to the building official.

Please see the figures on the following three pages:

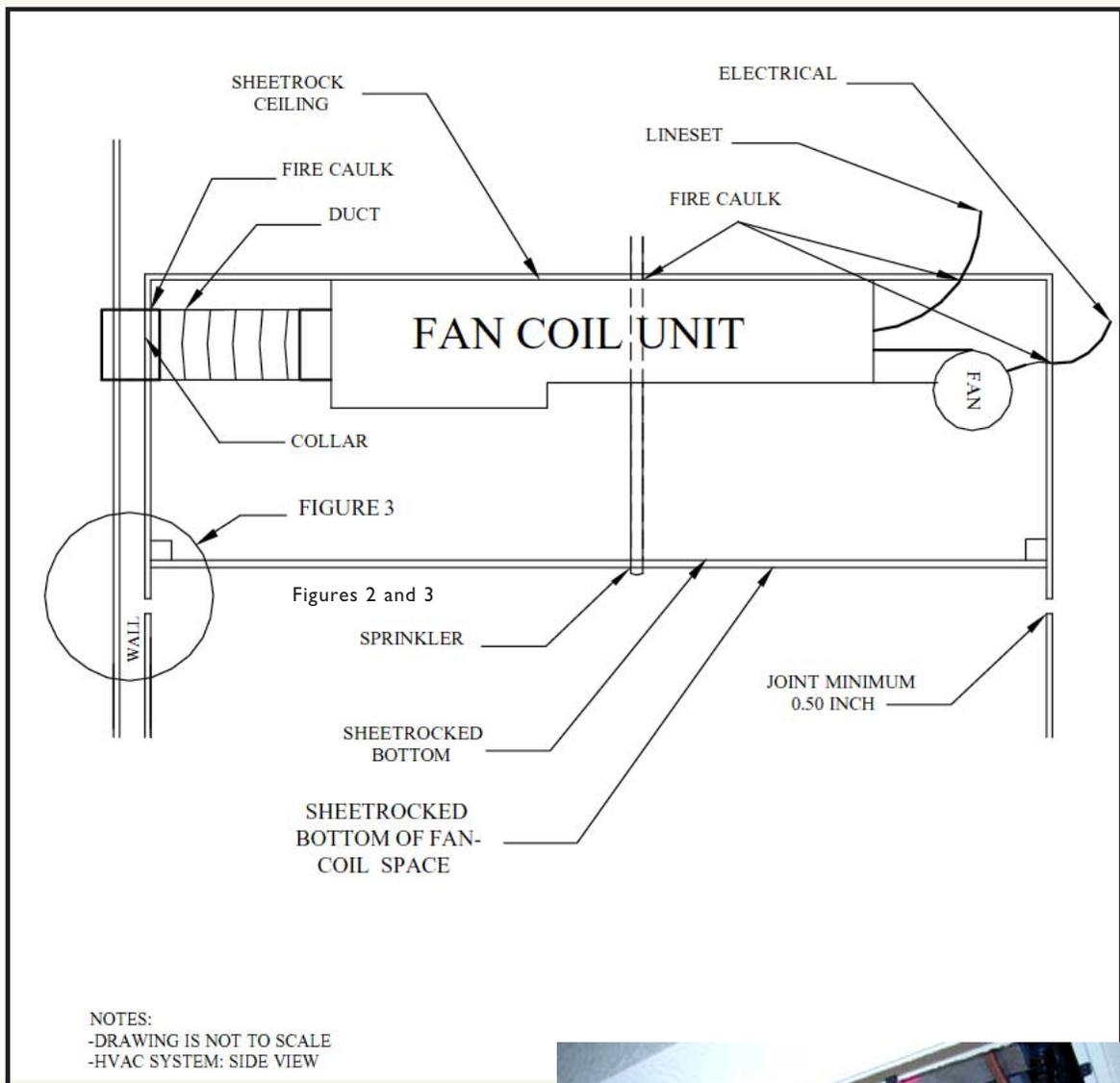


Figure 1. Cross-section drywall detail for fire code separation for multi-family, non-ducted ceiling returns for fan coil units.



Pictured here: A fan coil unit installed.

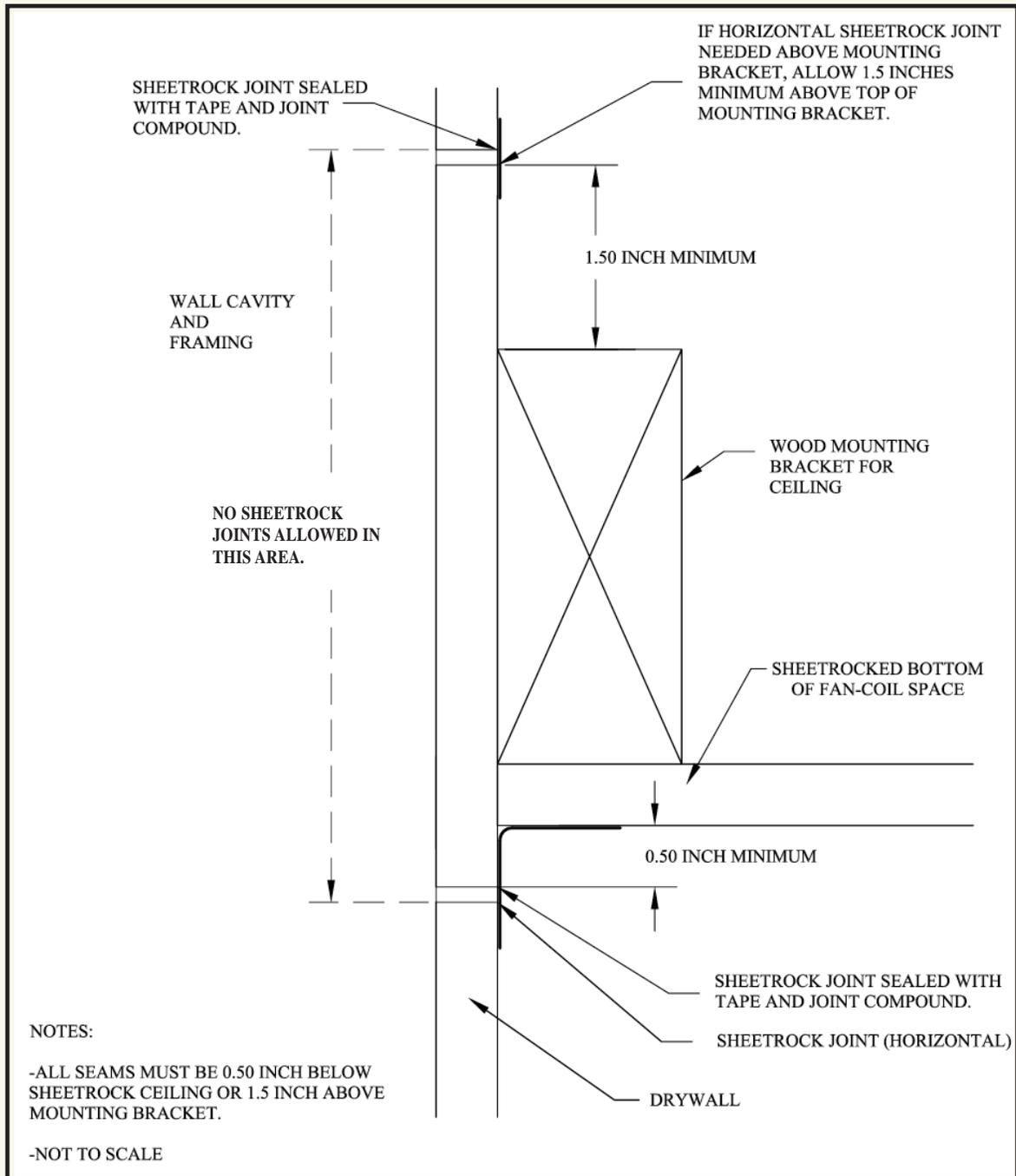


Figure 2. Cross-section drywall details for fire code separation for multi-family, non-ducted ceiling returns for fan coil units – Wood Bracket

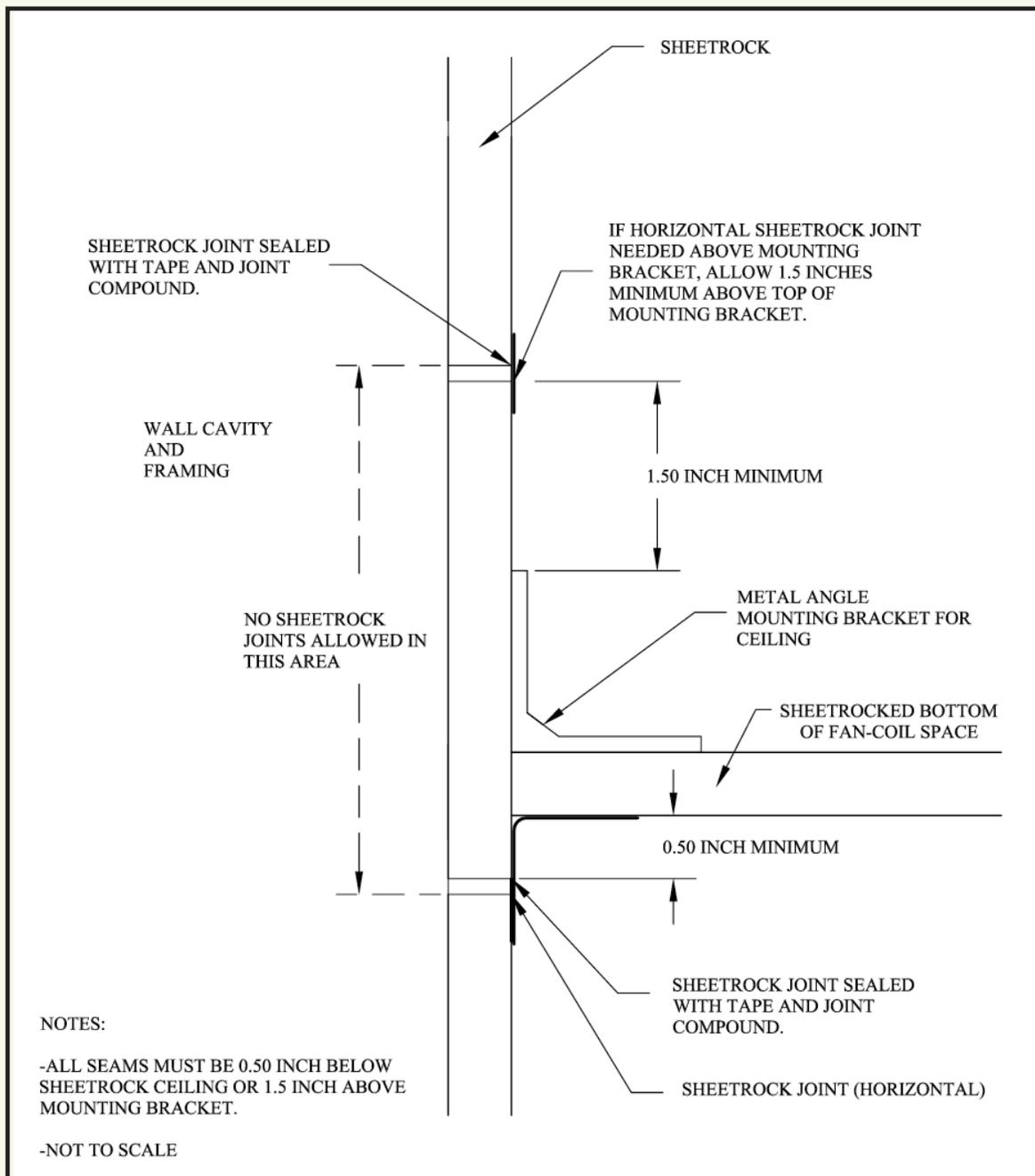


Figure 3. Cross section drywall details for fire code separation for multi-family, non-ducted ceiling returns for fan coil units – Metal Bracket

SEEKING EXCELLENCE

The third in a series of articles about building department employees, builders, energy consultants, HERS raters and others who are making exemplary efforts to achieve energy efficiency in buildings.

Part one of two:

In this issue we begin the first of a two-part article on the Community Energy Efficiency Program (CEEP). In this voluntary program, builders, energy consultants and building departments work together to improve the quality and energy efficiency of the houses they produce. There are many benefits for the individual groups involved, as well as the communities in which they build.

Blueprint staff interviewed several participants for these articles. In this first installment we speak with three people: the director of the engineering team that developed the third party field verification program used by CEEP, CEEP's manager, and the Technical Director of the California Building Industry Association, which sponsors the CEEP Program. In the next issue we will talk with a builder and a building department about how the CEEP program works for them.



Rob Hammon is a principal of ConSol, an energy consulting firm in Stockton, California. ConSol specializes in Title 24 compliance, training, and related builder programs. ConSol developed and administers in many jurisdictions the turnkey, third party field verification system that is at the core of the CEEP program.

Blueprint: What is the purpose of CEEP?

Hammon: CEEP's goal is to encourage builders to construct homes that are field verified by third-party HERS raters to be more energy efficient than the Title-24 Building Energy Efficiency Standards, that meet *Energy Star* requirements and that conform to the design and installation requirements covered by the Building Industry Institute (BII) scope of work protocols. CEEP is a

program conducted through the Building Industry Institute(BII). BII is the research and education arm of the California Building Industry Association (CBIA).

Blueprint: How does CEEP work?

Hammon: Once a local jurisdiction adopts the program, the participating builder submits a CEEP documentation package instead of the normal Title 24 compliance documentation. The difference is the CEEP package shows both what the builders do to meet code and what they do to exceed code. They must install tight ducts and spectrally selective glass plus the other measures needed for the house to meet *Energy Star* standards (15% more energy efficient than Title 24). They also must have engineered mechanical system design and third-party HERS rater verification and diagnostic tests for all measures.

Builders have to follow BII's scope of work protocols for installation of insulation, building envelope air sealing, windows, and mechanical systems, which form the basis of what third-party raters need to verify and test. The raters check insulation for quality of installation and do a blower door test to check building envelope air sealing. They do a duct blaster test to check duct air sealing, and measure air flows at the registers and compare the results to the mechanical design to make sure the air flows are correct. They also check to see that air conditioners are "right-sized" to match sizing calculations.

This documentation is submitted to the building department. It documents the Title 24 energy features, the HERS rating for the as-built condition, and all the features that are in the as-built home. There's a section for the scope of work protocols, so that they're included and not just referenced in the document. The field verification guidelines are in the document, and the mechanical design is done in accordance with the Air Conditioning Contractors of America (ACCA) guidelines. So ACCA Manual J load calculations as well as full ACCA Manual D calculations and a duct layout all go into the submittal. It is also required that these mechanical plans be stamped by a mechanical engineer registered in the State of California.

The submittal includes the Energy Commission's Title 24 forms and the HERS rating document. The C2Rs, CF1Rs, and ACCA documents are printed out using CAD. We have our own field verification check list, and we use documents that the building departments have seen before.

"One of the reasons the building departments like this package is that the whole documentation has been reviewed by a licensed mechanical engineer with proper "insurance"- that is, they have errors and omissions (E&O) insurance. We have a well-trained person who's responsible for the package. In other words, we are taking responsibility for this documentation. If it's not right, the preparer of the document is liable for anything that's wrong with it. We take that extra step.

— Rob Hammon

One of the reasons the building departments like this package is that the whole documentation has been reviewed by a licensed mechanical engineer with proper insurance — that is, they have errors and omissions (E&O) insurance. We have a well-trained person who's responsible for the package. In other words, we are taking responsibility for this documentation. If it's not right, the preparer of the document is liable for anything that's wrong with it. We take that extra step.

And that's something the jurisdictions value, because they have found through their experience with us that our submittals tend to be very clean and correct. Having a licensed professional review the document,

stamping the mechanical plans just gives building officials the extra sense that they're getting quality work. Because the work is of higher quality than they often see, it takes them less time to review.

The other side of the program is that builders are obligated to build to the submittal because the homes are thoroughly inspected by the HERS raters, and the HERS raters are inspecting all energy efficiency features, not just upgrades. Energy Star requires you to inspect whatever you upgraded. CEEP requires that the builder have a third-party inspect all energy efficiency features. So that's a significant difference.

Blueprint: By taking these extra steps, what are some of the benefits to the builders?

Hammon: The benefits for the builder vary

somewhat by jurisdiction. But high on the list of things that the jurisdictions provide is faster turnaround on the submittals. They may give the submittal a priority or special status – there are different ways the jurisdictions implement this.

Blueprint: How much time does it save, on average?

Hammon: It varies greatly, because the submittal load at different jurisdictions varies dramatically. In some cases, the review time may drop from four weeks to two weeks; in others it may go from four weeks to three weeks; or it may go from six weeks to two weeks. In some jurisdictions where their turnaround is already very good, officials will knock a day or two off of the time, guaranteeing an even better turnaround. So faster turnaround is one key element. I think all jurisdictions offer it to some degree.

The next benefit that CEEP provides is recognition for the builder. That can vary from a public official for the local jurisdiction — be it city or county — attending a grand opening ceremony, to one jurisdiction actually buying advertising in the real estate section of a newspaper for participating CEEP builders.

A very small number of jurisdictions offer reduced fees. They recognize that, because the applications are better than typical, they'll take less time to process, which means the fees can be less. But that's a tough one for the jurisdictions — especially in these hard times — so that isn't found much now.

Another less common benefit but a really good one that we may encourage more in the future is that jurisdictions provide priority field inspections. When we started CEEP, it was strictly to save time on the front end, but then we had a builder who got reduced plan check time and recognition. As the subdivision went up there were the regular building department inspection timing delays, and the builder called us and said, "Gee, we're CEEP, can we get priority field inspections?" We called the jurisdiction, they said, "Sure, good idea," and that happened. It's something that we're going to be promoting in the next few years as a very valuable benefit to the builders.

Blueprint: Why is CEEP good for communities?

Hammon: If homes are built better, they will last longer. Local goals for energy efficiency are

usually related to reduced outdoor air pollution emissions, and CEEP helps to provide improved environmental quality and better resource efficiency. A program like this also can lead to improved relations between builders and jurisdictions, and that's a good thing because sometimes those relationships are strained. The jurisdiction can be recognized for having programs for improving the housing stock and community relations.

There also may be an economic multiplier effect. If it takes more labor to build these homes due to higher quality construction, the dollars for the extra labor are dollars that stay in the jurisdiction. Those dollars earned for that extra value are spent there in the community.

Blueprint: I would think that, some of the laborers develop better skills for higher quality construction as a result of participating in CEEP.

Hammon: Right. CEEP results in a construction labor force with better skills related to residential energy efficiency.

Blueprint: The Energy Commission wants to promote third-party verification because we like the assurance that the energy efficiency measures built into the houses are high quality and result in the energy savings that are intended. Are the third-party verifiers HERS raters?

Hammon: Yes, and they are critical to the process. They need to be there to perform the field verifications and tests, do them correctly, and make sure that the home passes. They maintain a good working relationship with the builder and the local jurisdiction.

For third-party verification to work for the builder it's critical that the rater completes the verification in a timely fashion, knows what he or she is doing, and gets the verification and testing done without causing unnecessary delays. The rater must be able to relate well to the subcontractor who's doing the work and be able to get the corrections made on schedule with minimal impact on the superintendent and builder. We've managed to do all that.

Blueprint: Let's talk more about field verification. How does it work?

Hammon: Field verification is done at two stages, rough-in and final. We use checklist forms for each stage. The information that can be filled out before the rater goes on site –

At the grand opening of model homes participating in the CEEP program.

identifying the building and location and what the rater is looking for – is completed in advance by computer. We have a checklist form that we use at rough-in for verifying quality installation of wall insulation and windows. There's another form at near final where we do our duct blaster test, where the blower door testing is done, air flows are measured, and ceiling insulation installation quality is verified.

The raters do verification and testing, and fill out the forms. Then the forms come back to us. The data is then entered into the database of CHEERS or CalCERTS, whoever the provider is, after the building passes the final verification. There's no data entered until final verification is completed and passed.

If we go to a house and there are problems with the insulation, with the mechanical or whatever, we have a three-part carbonless copy form that the rater fills out in the field. They give one copy to the builder, a copy to the ConSol office, and the rater keeps a copy. This allows the rater to follow up to make sure that those faults are corrected before moving forward. It's a very important element of the process.

Blueprint: Can you highlight some of the CEEP successes?

Hammon: There was the very first jurisdiction, City of Chula Vista, with Brad Remp as Chief Building Official. Shea Homes submitted the very first CEEP project. We told them that with Brad's help, we were going to try and reduce the plan check time. The Chula Vista plan checker turned it around in roughly half the time that was typical. Shea wasn't ready, but was very surprised and pleased. The project did go faster. Another success was the City of Santa Clarita that, for a while some of their general fund monies were set aside to buy down permit fees. That was great.



Blueprint: Is San Diego Gas & Electric (SDG&E) the only utility that is involved?

Hammon: It started with San Diego Gas & Electric. The initial contract to develop the program came from them; hence the first jurisdiction was Chula Vista. But the long term supporter of the program has been Southern California Edison. Edison has the vision that, through voluntary programs, we can increase compliance, and we can increase the number of builders building above code.

Blueprint: Are the elements of CEEP fixed? Might CEEP evolve?

Hammon: CEEP *will* evolve. It's a stepping stone to a larger program that will provide more societal benefits. Ultimately, we would like to get developers involved. Currently, we have no input on the design of the homes or the layout of the subdivisions to achieve optimal orientation of the streets and houses, but we hope CEEP evolves that way.



Rob Hammon gives an interview to a local radio station about CEEP.



George Burmeister, of the Colorado Energy Group, serves as the CEEP Manager.

Blueprint: What motivated the formation of CEEP?

Burmeister: CEEP started back in 1999. San Diego Gas & Electric (SDG&E) asked us, the Colorado Energy Group, to go out and interview the leaders of the ten largest green building programs in the country to find out what worked and didn't work in those programs. From that, SDG&E asked us to create a program that worked for California's needs. We wanted to keep it simple for builders. In our research we found green builder programs that had 20 or more pages with boxes to "check." They were not "builder-friendly." The builder got 90 out of 180 points or whatever. With CEEP, it's much simpler.

Blueprint: Who benefits from CEEP?

Burmeister: CEEP is a win-win-win for builders, consumers and the local community. Builders like the program. CEEP allows them to move ahead of the Building Energy Efficiency Standards and even to meet future energy regulations by doing something proactive on the efficiency front. There are reductions in the pollution that results from energy production. The program results in more "money for the malls," more pocket money for people to spend locally, so the local communities also win. Consumers get cleaner air, have a more comfortable home, and they save money on their energy bills.

City Councils and Boards of Supervisors understand that, with the extra dollars not spent on energy, residents are not shipping those dollars off to an out-of-state or out-of-county energy producer; they're keeping the money in their pockets and spending it locally. We talk in terms of the multiplier effects of keeping the local dollars local.

Finally, the builder also wins when plan check gets done faster. If you shave plan check from two months to one month, the builder could sell the house faster, saving \$1,800 a month on construction loan interest they don't

"If Title 24 does become more stringent in the future, this program will have helped prepare us to be way ahead of the curve."

— Southern California

Builder Representative

as quoted in the 1999

Colorado Energy Group report

have to pay on the average California home.

We're trying to help builders differentiate their product. That's what the builder gets, and the city will recognize them and help promote them. The local community gets more money for their citizens to spend, and they get a reputation for being progressive.

The houses are built better and are more energy efficient, and the efficiency generally lasts longer. I saw a house under construction before ConSol went in to teach the builder's superintendent how to install the insulation per the BII scope of work protocols. You could put your fist into some of the gaps that were there. Afterward, you could not believe the improvement; it looked literally like you painted on the insulation. It was beautiful!

Blueprint: Rob Hammon has talked about ways that the jurisdictions encourage builders to participate. Are there any new ways that are coming along?

Burmeister: Yes. If you're building a CEEP home in the City of Riverside for example, the jurisdiction just agreed to defer transportation mitigation fees of \$6,600 per home. Every new home is charged this. Usually the City would collect it up front, before issuing the certificate of occupancy, which could be five months later. However, Dan Chudy, the building official there, has agreed not to collect it up front, but to collect it at certificate of occupancy, which saves the homeowner the interest on \$6,600 for up to five months. At five to eight percent, every little bit helps.

We may see this type of deferring of fees for CEEP homes start up in other jurisdictions. We expect to see jurisdictions coming up with other innovative ways to encourage builders to participate as well, as CEEP grows.



Bob Raymer is the Technical Director of the California Building Industry Association, CBIA

Blueprint: How did the California Building Industry Association (CBIA) get involved with an energy efficiency program like CEEP?

Raymer: San Diego Gas & Electric approached us about sponsoring a program. They said, “We’re having a heck of a time getting a program up and running that local builders and building departments will actively participate in.”

At the same time, we were looking for a way to help the building industry make the transition from one set of Building Energy Efficiency Standards to the next, because these Standards are updated on such a regular basis.

Back in the 80s, if a Standards change raised the cost of housing by \$50 to \$300 per home, that caused a lot of pain to builders. More often now the real impact is felt if there’s a substantial change in common construction design. If all of a sudden something you’ve been doing on a regular basis is no longer allowed it creates delays. When you’ve got a hot market like we’ve been in for the last five years, delays create a huge economic burden on the builder.

So with those two issues coming together, we thought there’s a great potential here. CBIA has an incredibly close alliance with California building officials throughout the state, both the counties and the cities. We had the ability to take a program, put it together, and maybe try something different.

The fact of the matter is, while the City Council or Board of Supervisors or the planning or land use divisions of local jurisdictions can take very active roles in looking at whether they want to build green, or want to encourage energy efficiency, it’s the building department where the rubber meets the road. With the relationship that we had with California Building Officials (CALBO), we recognized the potential for working together to create, on a case-by-case basis, a program that fit the needs and

“By and large, we can now say that, on a statewide basis we build far more energy efficient homes than our neighbors in the rest of the country.”

— Bob Raymer

capabilities of each local jurisdiction.

So we went into each and every jurisdiction, and asked, “What are you capable of doing at the local level? Can you help us out with advertising? Is it possible to reduce fees? Can you speed up plan check? Can you speed up inspection? Can you basically overlap certain inspections so it becomes more of an efficient process?”

And a nice after-effect of this is that it gave the local building departments the opportunity to look at how they do energy inspections and plan checks. “How can we become more efficient with current inspections? How can we integrate a new program with everything else to make sure that when it gets done, it’s done in a quality manner?”

Another unintended plus of CEEP is that, by promoting going beyond the minimum level of efficiency, you pretty much have to use third-party field verification. It’s a done deal. That helps us reduce, and in some cases eliminate, the prospect of construction defect litigation down the road.

Quality control verification up front is a low-cost and easy way to get compliance with the energy standards. Engineering the duct system layout and making ducts tight has become a hallmark of this program. It’s a low-cost and easy way to get compliance with the Energy Standards. That’s why it has become such a fundamental part of this program.

With CEEP, you can get a lot of things done under one program. Effectively you can get

your energy analysis, your plan check, your third party field verifications all wrapped into one service. Instead of creating logistics problems for the builder, it actually reduces them.

I've got to say that while the third-party verification was an option, if it hadn't been for a program like CEEP, it might still have been in the infancy stage. Right now, statewide, the building industry is at sort of an intermediate stage, with builders embracing third-party field verification for maybe 20-30 percent of homes statewide. Now I suspect within two years we're going to be at 80 percent.

Blueprint: Do the jurisdictions talk to each other and influence each other to accept a program like CEEP?

Raymer: You bet! It snowballed. Jurisdictions ask, "Is anyone else doing this around here?" And we can point to five or six nearby jurisdictions. "It's not that tough, see, they're able to do it there." And all of a sudden we see clusters of most of the jurisdictions in an area participating.

The problem we're running into now in Southern California is there are so many jurisdictions that are on board, it's difficult to find new large jurisdictions. As a result, we're focusing more on Northern California, through a contract from the Public Utilities Commission, which is being administered by Pacific Gas & Electric.

Blueprint: Has CEEP been a success for builders?

Raymer: I look at this as the technical director and also as an advocate for the building industry. The success I see is that it's a way to smooth the transition from one set of standards to another. All of a sudden that additional cost doesn't create much of a hurdle.

Blueprint: The builders are perceiving that now?

Raymer: Since CEEP's been in place, we've gone through two updates of the standards, the 1998 and then the emergency AB 970, and we're about to have another one in 2005. CEEP really helped smooth the transition. We used CEEP as a way to implement the energy standards on a massive scale in some of these large, higher volume jurisdictions.

Compared to what used to happen in the 1980s and early 90s when they changed the Standards, I'm not getting calls from builders. I'll have somebody that'll call up and ask me, "Do you have information that explains it?," but as far as people calling up yelling, "This is terrible! How

could this happen? This is awful!," I don't get those kinds of calls anymore.

On other regulations, like disabled accessibility, when there's a change for the multi-family market – when there's something else that either comes through the Legislature or some other agency – I still get heated calls. But the number of angry calls related to energy basically dropped. This tells me we must be doing something right.

It's a very nice after-effect. Instead of becoming an obstruction to energy efficiency, we've basically been able to partner. CEEP has helped us smooth this transition.

What's nice is that some builders who normally would have stayed away from third-party field verification until it was forced down their throat, by accident became familiar with it through their introduction into CEEP. Now they're not afraid of using it in other areas where CEEP isn't yet being implemented.

CEEP actually helped in those jurisdictions that aren't using it. KB Homes, Centex Homes, some very large builders, who would normally not have been at all familiar with third-party field verification, now just take it for granted that well, if we're using it over here and we can cut the cost of compliance with the Energy Standards by anywhere from \$800 to \$1,200 dollars by going third party, it's a huge win.

Blueprint: Are builders seeing long-term benefits?

Raymer: You must understand that there's a 10-year construction defect warranty that applies to California housing. There's a whole industry out there through a segment of the trial lawyers who aggressively pursue construction defect cases. That led to SB 800, the Homebuilder Construction Dispute Resolution Law.

With CEEP's enhanced quality control, the types of callbacks that would normally be common, such as, "My house doesn't get cool enough in the summer or warm enough in the winter," — those have dropped off. That could be attributed at least in part to the application of CEEP.

Blueprint: We had a chance to look at the report that George Burmeister, CEEP's Manager, wrote for the BII in 1999 related to starting the program. One thing it said was that "consumer education and strong marketing help were deemed of great value to the builders involved in 'green' building and community energy building

programs.” Can you say a few words about this from BIA’s perspective?

Raymer: Participation in CEEP sets your phased subdivision project apart from somebody else’s. You’re complying with the Energy Commission’s regulations and you’re going to be going beyond them. You can advertise that to the potential home buyers, and explain to them what the 20 percent more in energy efficiency means. It’s not just some nebulous, ambiguous type of a thing. You can explain that in this particular project, instead of slapping in a 10 SEER air conditioner, we’re putting in a 13.5 SEER, we’ve got a much higher efficiency water heater and furnace and tight ducts.

We can explain that houses 20 to 30 years old may have as much as a 50 percent leakage rate in their ducts. In this new house duct leakage is less than six percent, because the house has been tested. Suddenly people know more about energy efficiency.

There’s a lot of foot traffic through the models in a new subdivision, and that’s a marvelous opportunity to boast about “Well,



“...by promoting going beyond the minimum level of efficiency, you pretty much have to use third-party field verification. It’s a done deal. That helps us reduce, and in some cases eliminate, the prospect of construction defect litigation down the road.”

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we’ve got the upgrade in carpeting, we’ve got some security systems, and by the way, we’ve got our tight ducts. We’ve got this air conditioning system that’s immensely more efficient than what the state requires, and you’d be getting that if you buy this home.”

By doing that, you’re educating consumers on the energy saving aspects of the house.

By and large, we can now say that, on a statewide basis, we build far more energy efficient homes than our neighbors in the rest of the country. Certain jurisdictions in this or that state will have aggressive programs, but on a statewide basis, nobody really touches California; not just because of the Standards, but because our building officials are required to check it. It’s part of the Health and Safety Code and Public Resources Code. Before you can sign off on that final occupancy permit, you’ve got to

make sure x, y, and z are done.

The reduction in callbacks is clearly evidence that the quality control measures in the Standards are working. That is definitely a plus.



The California Energy Commission does not endorse any products, supplier, manufacturer or builder. The text in this interview is meant to be informational and not all inclusive.



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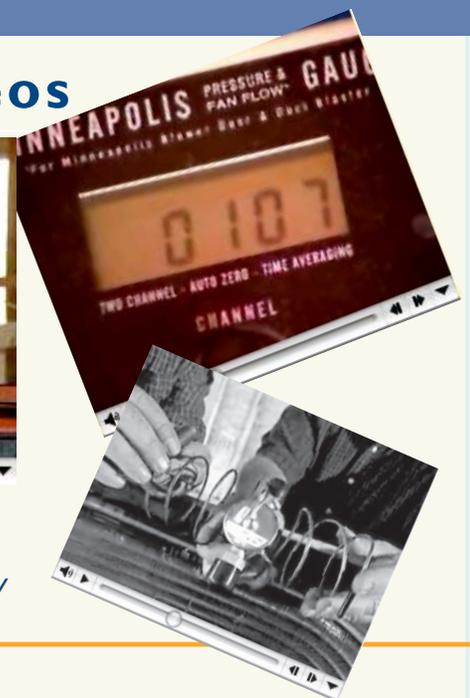
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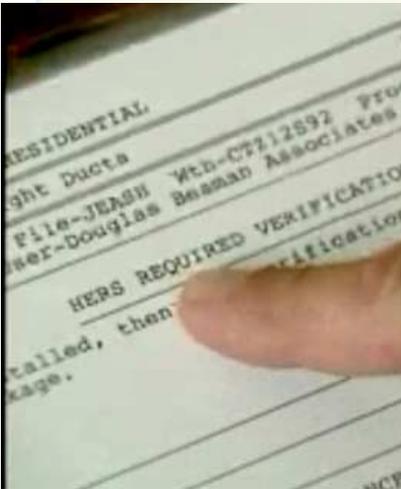
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Did you know?



Special information for
Building Officials
The CF-4R !!!

What is it?

Why is it important?

What should I do about it?

Answers: The *CF-4R* is the form completed by a HERS rater (third-party special inspector). It is required whenever the builder *chooses* to use third-party field verification to achieve compliance with the energy code.

The *CF-4R* is very important because compliance credit is given for having systems third-party verified and the *CF-4R* proves that verification was done.

Protect the Consumer!

All you need to do is:
Have your inspectors ask
the builder for a final copy.

*“CF-4R
– Don’t “final” the house
until you have
a completed copy!”*



For a training video on “**Enforcement of HERS Ratings**” go to:
http://www.consumerenergycenter.org/videos/residential/CHEERS_HERS/code

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▶ Title 24 Energy Efficiency Standards Training

Links for training on issues relating to California Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) is available on the Energy Commission's web site at:

www.energy.ca.gov/title24/training

For training offered by the utility companies. Please see the following websites for possible training sessions within each utility's service area

PG&E

www.pge.com/stockton

For information on training in Early Compliance Credits for Residential Lighting conducted by Doug Beaman:

www.pge.com/003_save_energy/003c_edu_train/stockton/programs/res_lighting_credit.pdf

SoCal Gas & SDG&E

www.socalgas.com/business/resource_center/erc_seminar_info.shtml

SCE

www.sce.com/sc3/002_save_energy/002f_ctac/002f3_work_classes/default.htm

▶ CALBO Training Institute

EDUCATION WEEK

Central

September 7 – 9, 2004
Modesto Doubletree

North

October 4 – 8, 2004
Concord Sheraton

South

November 1 – 5, 2004
Ontario Marriott

For additional information:
www.calbo.org

▶ Building Industry Institute Training (BII)

www.consol.ws/content.asp?sid=46

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<http://www.energy.ca.gov/efficiency>