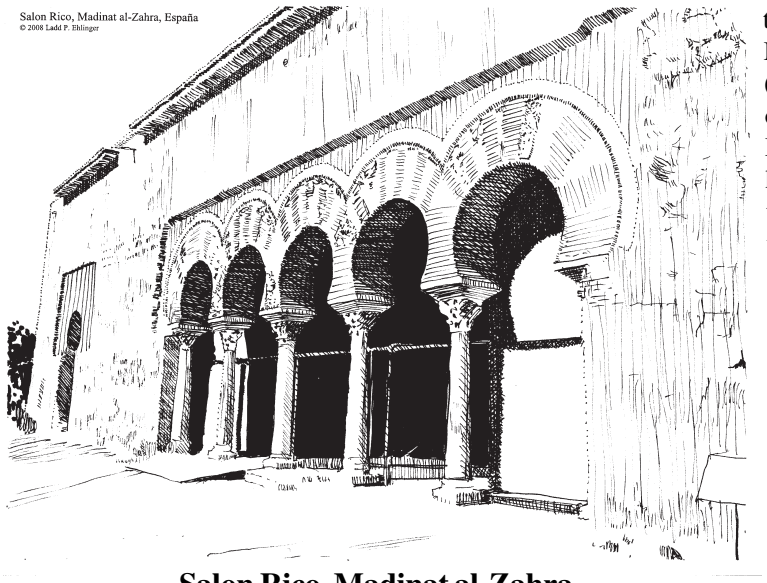
ARCHITECTURE

EHLINGER & ASSOCIATES **THIRD QUARTER 2008**



Salon Rico, Madinat al-Zahra

The Salon Rico of the city of Madinat al-Zahra was the reception hall for the military of the caliph that ran this city that was five kilometers from Cordoba. Madinat al-Zahra was begun by the caliph Abd al-Rahman III in the year 936, shortly after the proclamation of the Umayyad caliphate in al-Andalus (present day province of Andalucia in Spain) and completed by his successor, caliph al-Hakam II in 976. Abd al-Rahman wished to establish his court at a prudent distance from the large (in those days) city of Cordoba and it's potentially unruly mobs.

The city was only occupied for sixty-five years. In the year 1010 the city became embroiled in a civil war for control of the calipate. It was sacked by mobs from Cordoba, and then again by the Berbers and totally destroyed. It lay empty and fallow on the mountainside and was enveloped by dirt washed down from the mountain such that it became fully buried. It remained this way for centuries and the original name was forgotten, with what little remains there were being renamed Cordoba la Viejá (Old Cordoba). It has taken eighty years of archeological excavation that began in 1910 to restore the city to it's present state.

The city is on the southern slope of the Bride's Mountain (Jebel al-Arus) of the Sierra Morena and has a spectacular view of the Wadi al-Kabir valley and of Cordoba in the distance. It is built upon three terraces. The upper terrace contains various buildings of governmental administration and royal ceremony as well as residential quarters for the caliph and his court, the middle terrace contained mostly gardens with pavilions and pools, and orchards; while the lower terrace contained the congregational mosque, markets, and residential quarters for the merchants and the military.

The Salon Rico is rectangular in plan with the five bay horseshoe arches that are richly decorated dominating the main facade shown in this issue's limited edition print of a sketch by Ladd P. Ehlinger, and has interior arcades of horseshoe arches on each side supported with multicolored marble columns and capitals that support architraves of Mudéjar (pronounced 'moo-DAY-har) plaster, a type of formed or carved plaster with very intricate geometric patterns that was developed by craftsmen/artists in Spain during the time of the Moorish occupation.

One enters Madinat al-Zahra from the north, and walks down the three terraced levels when traversing the city. The fortified area consists of a rectangle about one mile by 815 yards wide. Only about 10% has been excavated so far, as is known from infrared studies of the surrounding terrain. What is there though is well worth seeing.

Solar Cells - A Second Look

A couple of years back, I wrote an article about Solar Cells, and I recommended against investing in them because of cost concerns. Well, now I can write about the first appearance of the next generation of solar cells, and how it almost might be time to consider them!

Thin-film solar cells are finally on the market. The technology has been touted for a couple of years, as it has several advantages over traditional crystalline solar cells. They don't experience broken connections due to inter-cell contact failure, which means if one portion of a panel fails, the rest of the panel still works. They produce more electricity per watt rating because they work better in low light situations (early morning, late at night, cloudy days, etc.), and continue to work even if covered in dust/pollen or with a scattering of fallen leaves/needles, reducing their maintenance requirements. They're also a darker color than crystalline solar cells, making them more attractive. One drawback is that they require more area to produce the same amount of electricity as crystalline solar cells, but with such a large price differential (see below), it's a small concern unless you have very limited space.

The first direct to consumer sales I've found are available at: www.atensolar.com/14.html, and they're priced at $3/watt. This is 30% less than crystalline solar cells, which now average about $4.50/watt (It was $4.75 when I last wrote about them). It's enough of a price swing where adding solar cells to your house or business may soon be a *good financial decision*, vs. a "green" luxury. Furthermore, as more thin-film solar cell plants come on line, the price is expected to continue to drop, with predictions at $2/watt in a couple of years.

Let's convert the $3/watt cost to something that makes sense on a larger scale, because by itself, it means very little - especially since the savings are only in the cost of solar cells. For most applications, you'll need a grid-tie inverter (so you can still use grid power), and you'll still need to

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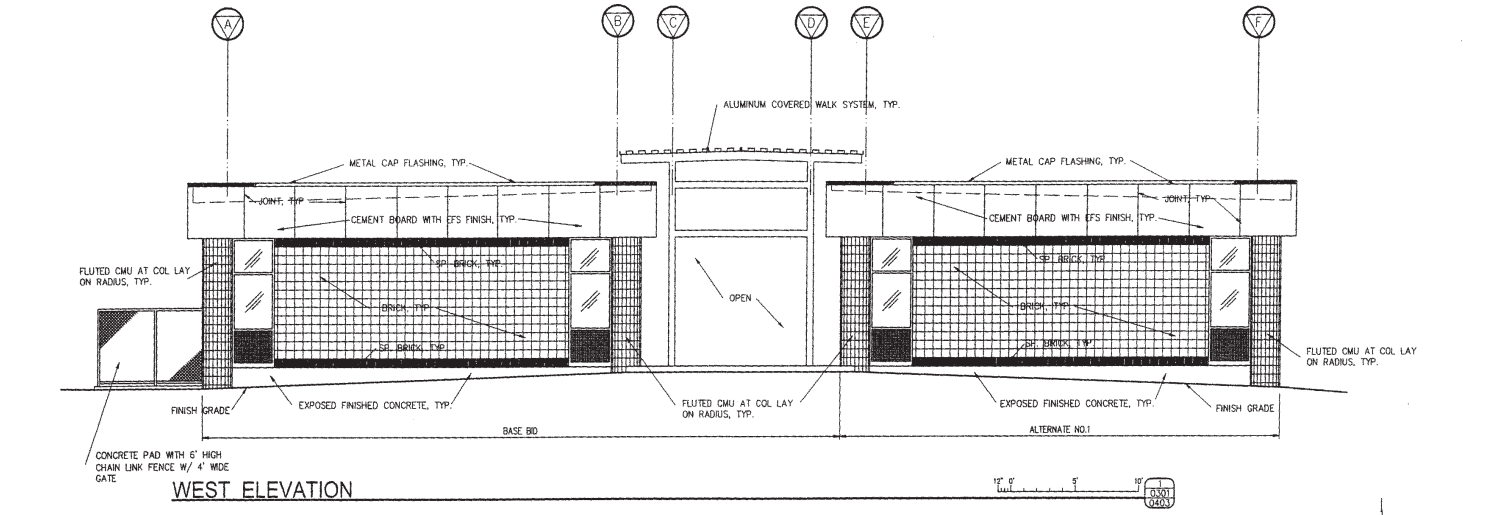
pay for installation of the panels and hook up of all the equipment. For a house sized application, the inverter will cost about $3,500, and you'll need about 2.5 kw of power of panels - $7,500 vs $11,500. Throw in installation costs of about $7,500, and a system that provides about 1,000 kwh of power/month will run you about $18,500, a good bit of which you'll be able to claim on your taxes, for further savings. (I've heard from $2,500 to $5,000).

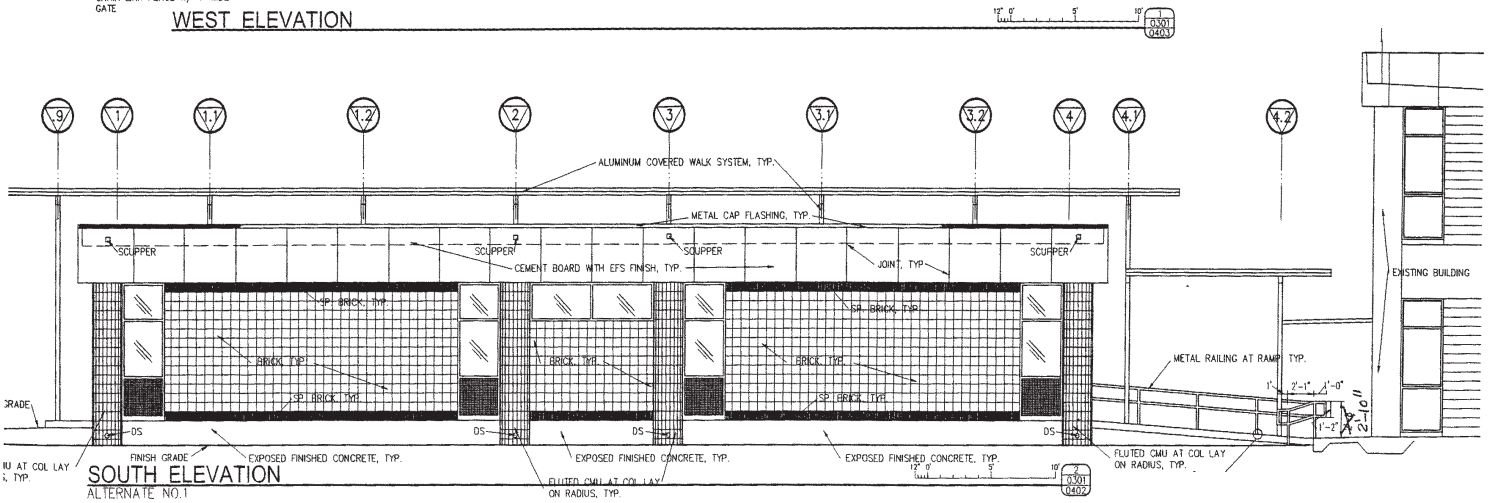
Even ignoring the government incentives, the new lower cost of solar cells, over it's 20 year warranted life, now places it on equal price footing with most local utilities. Over 20 years, this sample system will have saved $19,200 (at .08/kwh) versus its $18,500 cost, and that's with no adjustment for increase of utilities costs over time - so it will likely save even more. It's still a huge up-front investment for such a long term return, which is off-putting, especially in this economy. However, every roof eventually needs replacement, and that's a perfect time to upgrade, as you'll find further savings if you can mix the installation of the panels with a new roof, as the supports for the solar equipment will be covered in the new roof's warranty.

Further savings can be had on larger installations, as the cost of larger inverters does not increase linearly, and installation costs can be lowered with repetition. This should make it even more attractive for businesses and institutions, which have large roof areas.

In the next couple of years, I look forward to installing some on my new house (I'd do it right away, but unfortunately there's not enough in my current construction budget).

by R. Perrin Ehlinger





Solis Elementary School
Pre-K Addition

The elevations above are of a four classroom Pre-K addition to the Solis Elementary School on the West Bank of Jefferson Parish, designed by Ehlinger & Associates that was successfully bid at slightly over $1M and is about to go under construction. Solis was the only school which had no permanent Pre-K classrooms in the Jefferson Parish system. State law requires that Pre-K and Kindergarten classes be on the ground floor with easy access to the exterior and play yards. Another parameter of the design was that the basic design be two classrooms, with an additional two classrooms being bid as an alternate due to problematic funding. The funding was gained from FEMA as part of Hurricane Katrina mitigation. Another design criteria was that the addition match the appearance of the existing buildings