



# ARCHITECTURE

EHLINGER & ASSOCIATES

SECOND QUARTER 2007



## PALAZZO DUCALE

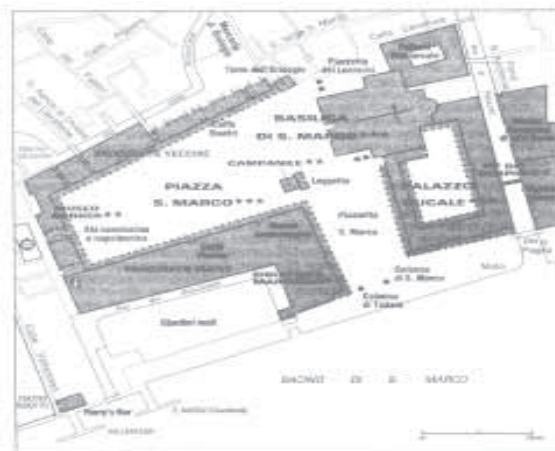
The Palazzo Ducale is the proper name of the Doge's Palace, this issue's limited edition print of a sketch by Ladd P. Ehlinger. The Doge's Palace was both the living quarters of the Doge and his family and the seat of Venetian government. The duke of Venice or the Doge held court here, the Senate of the Republic of Venice met here. Justice was meted out here in the court connected to the Prigioni Nuove (new prisons) across the minor canal (Rio di Palazzo) by the Ponte de Sospirir (Bridge of Sighs), so named for the reported sighs of despair of the prisoners as they made their way to and from justice.

cross from its campanile, and also fronts on the main lagoon at the Bacino di S. Marco, the terminus of the Canale Grande.

The design of the palace is striking, and almost the reverse of most Gothic and Renaissance period buildings. The construction spanned several centuries with the building acquiring the best of the stylistic hallmarks of each period. The pink walls or heaviest weight is on the top supported by the white stone columns and arches below. This marvelous contrast of the dark voids of the columns and arches to the flat walls topped by oriental cresting that opposes the arches in form, sets the form and tone from a distance. When one moves closer, the decoration and sculptures on the columns and arches enhances these structures, while the pink color of the walls are revealed to be a diamond pattern of rose and white marble bricks.

Upon entering the structure, one is led into a cortile (courtyard) and then into the public and private quarters, which even today are maintained in as sumptuous a condition as centuries ago, even though the building no longer serves its original functions.

Today it is a museum open to the public that is worth seeing.



The site of this palace goes back to the origins of Venice itself. The present

site was decided in the year 810 by the Doge Agnello Partecipazio, as well as the decision to no longer have the palace like a citadel and to rebuild it more like we see it today, as an urban government office that also is a symbol of governmental presence. It is sited on the main square, Piazzetti S. Marco, next to the cathedral and across

## GREENARCHITECTURE: The latest craze or the latest crazy?

The latest trend in Architecture is the incorporation of the "Green" movement into design. As with any trend, it comes with many good and bad ideas, and telling them apart can sometimes be difficult. The movement itself seems to be noble, with every goal towards the benign: low energy consumption, use of recycled and renewable construction materials, along with design and construction methods to achieve "low impact" construction.

However, in implementation, not everything is as it seems.

At the most basic level, "Green" is a fundamental concept to design, and costs nothing to implement if you have a knowledgeable architect. There are numerous design methods that are passive, simple, and low cost, and have been around for much longer than the "Green Movement". For example, consideration of a building's orientation towards the sun, window placement, and landscaping can often have a greater impact on a building's energy consumption and comfort level than any new technology or material.

Use of simple materials like brick or stone, to create areas called "thermal mass" on a building can be used to absorb heat from the sun and help to keep a building cool during the day, or even to help heat a building in cold climates. Use of simple elements, like shading fins or canopies over windows, can also help regulate a building's heat gain or loss. All of these ideas so far make sense, and if designed properly, are probably more important than any later "green" considerations. Since this is the foundation of "green architecture", let's call it the "Grass Green" level.

On the next level of "Green", we begin to encounter more difficult considerations; ones that increase the initial cost of construction, but offer the promise of lower long-term costs, and in some cases, lower maintenance: mechanical and electrical equipment. For example, if you choose to

go with a geothermal heat pump air conditioning system. It's a large cost, drilling into the ground and running the coolant exchange system, but the long term energy savings can be tremendous, even over the highest energy rated A/C's, with a slight downside of it being more difficult to service. Using tankless water heaters is another choice. Fairly expensive equipment, but over the long haul, the savings in energy and the lower maintenance makes up for it. Other choices include adding photovoltaics, solar water heating, LED lighting, and choosing any number of the new generation of mechanical/electrical devices over their standard counterparts, like refrigerators, dishwashers, laundry, etc. I like to think of this level of "Green" as "Army Green", because these choices are mostly about the costs of outfitting vs. return on investment. Some are very smart choices, and some never show a return.

As we move up the Green ladder, we encounter "Slime Green" next. As the quest to turn Green encompasses all aspects of design, it reaches a level where people wishing to incorporate it must make changes to their own lifestyle to accommodate it. Appropriately, "Slime Green" is mostly about plumbing. A great deal of "Slime Green" has already been forced upon us by Federally mandated changes, like low-flush toilets, and pressure reducers built into sink, faucet, and shower heads. There's more, though. Splitting a plumbing waste system into grey and black water disposal, for example. Grey water is water from lavatories and showers, and when not mixed with food from a disposal, from kitchen sinks. Black water is toilet waste and food waste. The grey water can be used to flush toilets, and to water lawns/gardens after a light treatment in a small septic system. To have a system like this, you increase the construction cost to install 2 drainage systems that do not interact, along with a septic treatment system. You probably won't be able to use a sink disposal, and will have to dispose of leftover food in the waste or compost it or flush it. You'll have the increased maintenance costs of a septic system (albeit small), as well as the potential for grime in your toilet from filling the tank with used water, and you'll have to be careful with contents you pour into the sink that could harm the septic system, and you may even have to change soap and shampoo. On the plus side, during

droughts, your grass will always be green so long as you shower and brush your teeth, and your neighbors will be envious. "Slime Green" has yet another level, though: composting. Composting toilets, while a very old technology, are making their way back into style. At prices ranging from \$2000 - \$10,000, you can convert your toilets to one of several new composting technologies. With just a couple of worms and a good vent stack, you can add a composting tank to the exterior of your house, and never flush again. For a little extra, you can buy a deluxe toilet with electrically assisted composting. You'll have to get used to "not flushing" the toilet, though, and you'll have to empty out the composted material every now and then, and you'll have to figure out what to do and how to fix it on your own if it breaks, because you can't find a plumber who can help you. Despite the seeming bizarreness of this, it's actually a cost effective choice for areas where there are no sewer services. The septic system used for grey water need only be about 1/10th size of a full septic system, and if you can change your lifestyle to accommodate the strange toilets, they don't use water or power and have no long-term costs beyond maintaining the composting culture. It's a pretty big lifestyle change, though.

The next path in Green Architecture is the "Mold Green" path, because of the inherent problems in using unusual and new materials in construction. There is a large push to use "sustainable" materials in construction, and while some of the ideas are novel and harmless, many are plain stupid. On the novel and harmless side are new finish materials, like bamboo or cork flooring, where new technologies mixed with old can create a decent finished product out of cheap material, which can then be branded "green" to create a demand for it, and justify the price. This is also true of using recycled plastics for exterior furniture, reclaimed lumber, recycled bricks. For the most part, there's nothing substantially special or detrimental about any of these products, but they do generally cost more because many are willing to pay more just to have the "green" brand.

This problem is generally true for any cellulose based insulations, which are often touted as "green" for their use of recycled paper products. What they don't tell you is that for all the chemicals and treatments applied to it to make it fire

retardant and mold resistant, you'd just as soon have stuck with fiberglass insulation or a foam insulation (which can no longer use ozone-destructive gases), which provide much better results in insulation capability, long-term energy savings, and near zero-maintenance, whereas cellulose insulation settles over time with reduction in its insulation rating, has a limited life span in humid environments and should be replaced every 10 years, or if it's wet.

Finally, there's the "Neon Green" level of the movement. Like waving a red flag, "Neon Green" Design is that which should be approached with utmost caution, and even then is likely doomed to failure from the start. These are grand ideas like turning your roof into a garden... literally. Not with the use of potted plants or planters, but actually putting dirt and soil on your roof and planting grass/bushes/trees there. New roofing materials, touted as "root resistant" in addition to water resistant, supposedly resist breaching from roots. Even if the claims are accurate, which is extraordinarily doubtful given E&A's past experiences with fixing roofs of this nature (when it was popular to do these in the mid 50's, we fixed them through the early 70's), the additional cost of added structure to support the weight, the use of exotic roofing materials and the employment of novel drainage systems generally turn such design adventures into nasty train wrecks of roof leaks and structural failures.

The goal of "roof garden" design is to reduce the heat impact of a building's roof, as well as to contribute to the reduction of "global warming" through use of plants. A noble ideal, but completely impractical and counter-productive as it will almost definitely be replaced later by a standard roofing system, wasting twice the energy and expense through its failure and replacement. A much better method would be to simply design a white colored roof for low heat gain, and then use potted plants and planters with a light irrigation system to decorate it.

Take it for what it's worth, though. Most of the "Green" movement in architecture is nothing more than a fashion trend: new dressing for old ideas. Many of those old ideas were bad then and still are, you just have to see them for what they are under their new clothing. Some, though, have promise and might be around for a while. It just takes some experience to see if you're going to be wearing a classic suit, or the emperor's new clothes.

*R. Perrin Ehlinger*