Looking Backward In Order to Move Forward: The Chicago Courtyard Apartment Building

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2009 Kansas State Sustainability Conference on Leading Kansas in Sustainability
January 23, 2009

In the United States, buildings consume about 30% of the total energy used.

Introduction:
My research on The Chicago Courtyard Apartment Building Type has inspired me to think about sustainability and the application of planning for sustainable buildings in a new and critical way. Specifically, I believe the planning of the Chicago Courtyard Apartment Building Type, which was developed before the wide scale application of air-conditioning technology, is superior to any other widely used American apartment planning type developed since that time.

Air-conditioning:
Air-conditioning was not technically and economically feasible until after 1930 so courtyard buildings had to rely on passive planning strategies to allow for naturally ventilated units. The designers of these buildings could not rely on mechanical ventilation and cooling to overcome poor unit design and orientation. While researching these buildings, I realized the strategies used to plan these buildings, relative to passive ventilation and natural daylighting, could also be used as a model for contemporary sustainable apartment buildings.

Many modern environments would be totally uninhabitable without air-conditioning. These environments come at a cost both financially and in terms of the quality of the environment. We can all think of buildings that we must spend time in that do not have operable windows and require air-conditioning on days when it is pleasant outside. This type of building design was feasible when energy was inexpensive but when energy becomes so expensive that we cannot afford to run the mechanical systems we will be stuck with buildings that cannot be easily adapted for passive ventilation and daylighting.

This is why the oldest buildings, with their shallow footprints and operable windows, may be a better platform for a high performance sustainable building than a building that was built 20 or even 10 years ago. Because using no energy, or as little energy as possible, is inherently sustainable apartment unit designs that can take advantage of natural ventilation have an advantage over unit designs that cannot. By utilizing higher standards for insulation and envelope construction, the courtyard type might become a flexible and economical model type for contemporary sustainable multi-unit housing.

The Basic Planning Principals Explained:
Everyone spends time in buildings but many of us might not realize why we are more comfortable in one building over another. The planning of a building can go a long way to explain user comfort. A simple comparison.

Buildings that feature internal hallways (double loaded corridors) generally prevent the possibility of cross ventilation and daylighting especially when there are doors to the corridor.

Conclusion:
The current sustainability paradigm shift is an opportunity to rethink the models upon which we base our work. Researching the Chicago Courtyard Apartment Building reveals a flexible planning strategy that could also be an appropriate model for sustainable apartment building design.

Sources: