

The value of collaborative design

When we speak of sustainable building design, we often speak of 'holistic' thinking, collaboration and complexity. Our industry is currently in transition, developing not just a new way of building, but an innovative approach to the way in which we think about buildings.

Western art and architecture historically developed through the theory and practice of 'one point perspective.' Traditionally, paintings were taken from the point of view of one person, looking towards a converging horizon. The ideology of "one" then permeated our culture from the sports hero, to the superstar, to the big name artist and famous architect. However, eastern culture developed in very different ways, focusing instead on 'pattern thinking.' Great manuscripts and illustrations were created anonymously by unknown artists working collaboratively as part of an "atelier." Typically, they saw objects from multiple image points rather than just one vantage point. This, in turn, created a complexity and a harmony more reflective of natural systems and patterns.

Our current energy modelling programs are a real innovation in building design perspective. Based in complex pattern language, they apply a "fuzzy" logic to the performance of a building over a year to extrapolate out its unique annual patterns of behaviour. This non-linear algebra based fractal geometry analysis allows us to understand building dynamics through seasons. We see



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patterns of light spilling through space and patterns shifting throughout the year. We see thermal patterns highlighting hot spots and heat loss as radiation blooms on the images. We also see patterns of air flowing through spaces responding to temperature changes and volumetric configurations. This overlay of patterns is then intuitively analyzed by a collaborative group of experts to determine the optimal pattern response. Increasingly, this new technology is moving us towards shapes that mimic natural forms – wave forms, petalled forms and crystalline forms.

Although this synergistic thinking has its roots in the science, not the art, of architecture it nevertheless presents us with complex and intriguing 'natural' form expressions that are fluid and dynamic. In practical terms it also results in a much higher building performance combined with a refreshingly relaxed natural form. We have a new appreciation for patterns and detail that may soon express itself in the finishing of the building as well.

As we move through this new century, it is becoming clear that western building practice is slowly becoming more collaborative. Our projects now address a vast array of complex issues; we consider patterns of light, of air movements and of decoration in a way the early modernists only rarely explored. In becoming less reductionist and more inclusive, we raise both the performance and aesthetic level of our buildings. As we progress away from the one point perspective of individual design towards the collaborative design approach, we bring depth, complexity and real harmony to our creations. This is the basis of truly 'sustainable design' and it is crucial to re-establishing buildings as the highest form of human expression. ■

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