

Understanding the Barriers to High-Performance Buildings

The journey to success in the Green building industry begins with a strong understanding of the barriers to high-performance buildings. Once we understand the barriers, we can develop new ways of thinking and work toward achieving much higher performance levels.

A strategic paper, written by Amory Lovins and titled [“Energy Efficient Buildings: Institutional Barriers and Opportunities”](#), provides insight as to why there exists such massive market failure in the way we design and construct buildings.

“The reason for this failure has to do with the institutional framework with-in which buildings are financed, designed, constructed and operated: many of the two dozen actors who play a role in this process have perverse incentives that reward inefficient practice. Fragmented and commoditized design, false price signals, and substitution of obsolete rules of thumb for true engineering optimization have yielded buildings that cost more to build, are less comfortable and use more energy than they should.” - Amory Lovins



Some of these barriers include:

- ☒ Developers and investors typically want fast, cheap buildings and focus more on net income rather than optimizing the total life-cycle cost of owning the asset.
- ☒ Buildings are normally designed with no customer feedback, as post-occupancy evaluations are rarely conducted. By not closing the loop, we continue to make the same mistakes.
- ☒ Designers are rarely consulted at the front end of a project, where opportunities for savings are the largest.
- ☒ Designer concerns about liability are most easily met by over-sizing equipment to meet peak demand and worst-case scenario design conditions.
- ☒ Engineering fees reward over-sizing of equipment and the design of more complicated and expensive systems
- ☒ Safety margins of 50% to 100% are totally inappropriate and eat up budget dollars that could be put to better use.
- ☒ Buildings are often orientated to create a 25% energy penalty, which also drives up the cost of mechanical and electrical systems required to handle the additional building loads.
- ☒ There is no NEGAWATT University to teach engineers demand-side management strategies
- ☒ Efficient operating procedures are rarely documented,
- ☒ Many buildings are full of “Half-Dead Zombie Controls” and need to be commissioned
- ☒ Just-in-Time Design treats design as a linear science rather than a systematic art.

By reinventing the building design process, we can eliminate these barriers and build better buildings that perform economically, provide a better quality indoor environment and are more sustainable.