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# Greener buildings

**H**ow energy efficient will the government headquarters at Tamar be? It should be among the most energy efficient in the world since it will be a brand-new development. Moreover, the chief executive has promised to reduce emissions there and conduct a carbon audit, both of which will involve an efficiency drive.

Business has become much more interested in efficiency because energy prices are high and there is a better understanding that burning fossil fuels causes climate change. A key way to mitigate these factors is to use energy much more efficiently.

The Hong Kong-based Asia Business Council has just released a handy publication on energy-efficient buildings, noting: Why green buildings are key to Asia's future. The book points out buildings are responsible for at least 40 per cent of energy use in most countries and energy demand is soaring as construction booms, especially in countries such as China and India. It notes the sobering fact that half of the world's new construction is in these two countries. Since buildings account for around 30 per cent of the world's greenhouse gases, energy-efficient structures are just as important as efficient power generation and transport.

Another business group, the influential World Business Council for Sustainable Development, is promoting a world in which buildings consume zero net energy. This means buildings as a whole (but not every individual structure) would generate as much energy as they use over the course of a year.

The world council sees three main ways to achieve this: by using, for example, insulation and more-energy-efficient equipment to cut energy demands; by producing energy locally from renewable and otherwise wasted energy resources; and by sharing energy – creating buildings that can generate surplus energy and feed it into an intelligent grid infrastructure. While all three are important, the council believes efficiency gains in buildings are likely to provide the greatest reductions and, in many cases, will be the most economical option.

Hong Kong's government is in a unique position to ensure that buildings are energy efficient

The chief executive has called on the local business sector to implement efficiency measures in commercial buildings. This is easier said than done.

Developers are the primary players in construction but tend to have a short-term focus – on financial value. They commission architects, engineers and contractors who have expertise in the technical aspects of

construction – including energy efficiency – but whose influence on key decisions may be limited. Owners frequently do not occupy buildings and therefore have little incentive to consider energy-efficient investments. End users are often in the best position to benefit from energy savings, but they are seldom in a position to make the necessary investment.

Even among building professionals, there are barriers to collaboration. The various technical experts involved in the building sector tend to work in their own silos, and it is difficult to take a holistic approach to projects.

Public-sector developers, such as the government, can show leadership through action, not talk. In constructing a new building like Tamar, the government can start by requiring the design to use less natural resources and ensure energy is used efficiently during the entire life of the building. For example, it is vital to get the lighting, cooling, heating and lift systems right. There can be considerable savings from choosing the right fixtures and fittings such as windows, lights and electrical items.

The government can also retrofit its existing buildings. Indeed, this is very important. There are plenty of examples of a quick return on retrofit investments from savings in electricity bills.

The government is in the unique position to tighten building and energy codes to ensure our buildings are highly energy efficient, which will make the city more, not less, competitive. Buildings can make a major contribution to tackling energy use, pollution and climate change, but their lifespan means we need to act now. It would be good if Tamar could make Hong Kong proud.

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