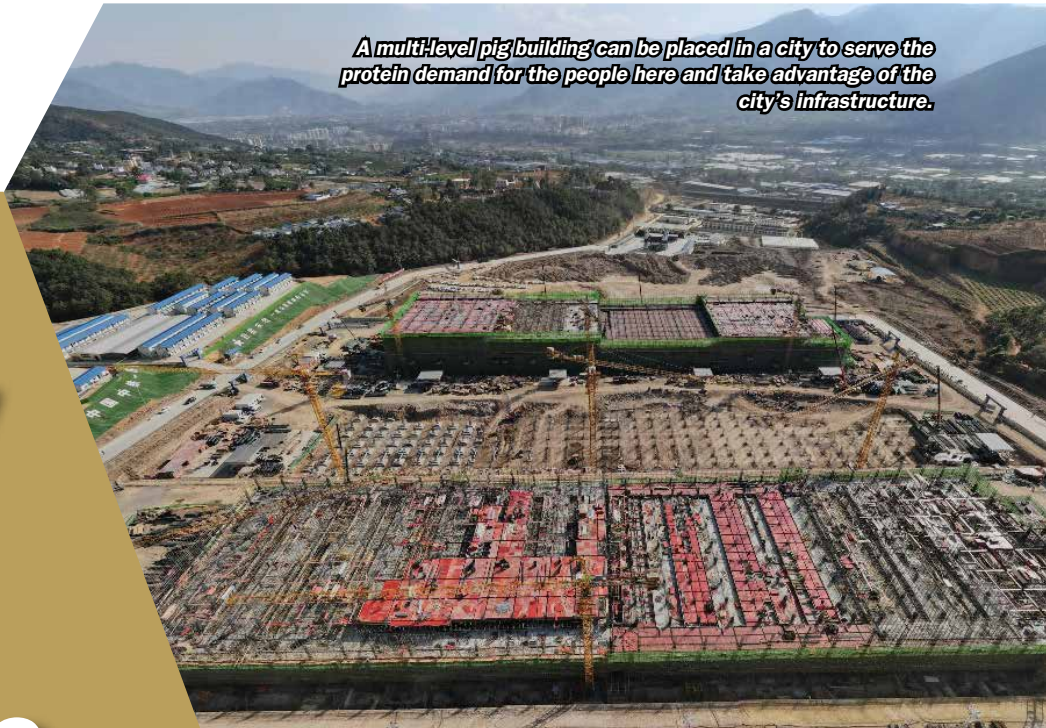


The way of the future: High-rise pig farms

A multi-level pig building can be placed in a city to serve the protein demand for the people here and take advantage of the city's infrastructure.



Demand for pork is growing, especially in countries where ASF nearly wiped out herds. Already feeling that pressure, pig producers must also face other concerns such as land scarcity and the growing threat of disease. HA THU writes that multi-level pig farms could be the answer.



“I think it is unsuitable and ineffective to raise pigs on farmland. Pigs don't need to be on a farm. They can live in a building, just like humans,” Swine Consultant John Carr, told *Asian Pork Magazine*.

He believes that the multi-story building could be the next revolutionary leap in making pig production more sustainable.



John Carr

How does it work?

A multi-story or a high-rise building for pigs can work as a vertically integrated chain for pig production. The highest floors would be breeding areas. Moving down, the next floors are for pregnant sows, weaners, growers and finishers. The lower and ground floor could

house a slaughterhouse and a pork retail shop.

“That is a complete ‘all-in-one’ integrated system,” Dr Carr remarked.

An entire floor is devoted to each phase of production and separated from other areas. This design helps reduce the transportation of farm inputs and pigs and lowers the risk of disease transmission.

It also requires less land — critical at a time when available land is scarce, Dr Carr explained.

“Vietnam has one of the most densely populated pig herds in Southeast Asia. However, most are conventional farms, which require much investment. A multi-story building would help reduce the pressure from expensive land capital,” a representative from HuaLi Food Equipment JSC told *Asian Pork Magazine*.

“With the same capital expenditure for land, we can have more pigs.”

HuaLi provides farm design and

equipment for pig and poultry producers across Asia. For the past two years, the company has been promoting its high-rise pig farm design to producers in Vietnam.

Raising pigs in a city

Ideally, these high-rise pig farms would be in big cities with well-developed transportation, sewage, and water treatment systems. Cities would also have retail systems in place, which are not always available in rural areas, said Dr Carr, adding that a multi-story pig farm could easily supply the city it is in.

For example, a multi-story building would be ideal in a crowded city like Ho Chi Minh City and its 10 million inhabitants. With an average annual per capita pork consumption of 28kg, the city would only need 10 multi-story buildings — each with a capacity of 10,000 sows — to meet its pork demand.

Moreover, cities may already have existing buildings that can be repurposed. “Empty housing blocks can be converted into pig farms,” he said.

These multi-level buildings will help reduce carbon footprint, an increasingly important concept in livestock production. Traditional animal protein production requires extensive transportation — moving feed ingredients from the port to the feedmill, then delivering finished feed to the farm, which then needs to bring pigs to the slaughterhouse, and on to the consumption points.

“Transportation is a burden on the environment and that’s what the livestock industry is trying to reduce,” said Dr Carr.



A multi-level pig building can be a complete ‘all-in-one’ integrated pig production chain with a sow unit, nursing and fattening areas.

The inclusive production system of a high-rise farm will also help reduce the supply-demand imbalance, especially during crises like the Covid-19 pandemic, when transportation of farm inputs and products is restricted.

Better biosecurity

Dr Carr points out that biosecurity is easier to maintain in multi-level buildings, where entry to and movement within the farm can be controlled.

“Biosecurity is expensive, but it will be easier to implement one in animal production systems with controlled and minimal entrances,” he pointed out.

“Wild animals, rodents, dogs, cats... all are major sources of ASF and other pathogens. Locating the pigs in buildings removes their contact with these animals. So, pathogen control is much easier.”

He added that a farm big enough to have its own slaughterhouse would also minimize transportation-related risks.

The HuaLi representative said that

due to the high density of pigs at the building, its biosecurity requirements are more stringent.

“For instance, the model has a central odor treatment area. It also has a high-rise ventilation design that is efficient in dispersing and distributing the air. These benefits help reduce disease pressure on the farm,” she said.

A trending model

The Asian swine industry is witnessing consolidation as producers seek better efficiencies and sustainability. As such, sustainable solutions like high-rise buildings are gaining traction.

“We have to feed a growing population, and keep pork affordable and wholesome. At the same time, we must look after the pigs and the environment. I believe the multi-story building will help us achieve these goals,” said Dr Carr.

“There’s always room for more options. There is a niche for small-sized farms that produce organic pork. Those farms will still exist and continue to be profitable. However, larger commercial farms will strive to produce more pork efficiently.”

According to HuaLi, constructing a multi-story building is about 30-40% more expensive than a conventional farm. However, it becomes cheaper than an on-ground farm when sustainability and biosecurity are factored in.

“In the future, I believe farmland suitable for crops will be too valuable for animals,” said Dr Carr, adding that a high-rise would be more viable, not to mention address misconceptions about pig raising, which some see as dirty and cruel. Raising pigs in buildings like humans changes perceptions — for the better. **Ap**



The waste treatment system of a complex of pig buildings.