Hydrock

Revolutionising the department store

ENGINEERING | ENERGY | SUSTAINABILITY

Revolutionising the department store

The UK's high streets and shopping centres are in need of a transformation. Nowhere is this felt more acutely than with the fate of the 'department store', frequently the 'anchor store' of any retail development.

At Hydrock, we believe with vision, commitment and public/private sector collaboration, these buildings can be re-purposed to create a fully-sustainable, vibrant sense of place in our communities that still drive the footfall expected of an 'anchor asset'.

Challenging the dash to convert these behemoths of the high street into complete residential blocks, we believe alternative solutions exist that offer an exciting user experience and create long-term commercial value through the delivery of social value to the local community.

Our vision is to embrace vertical farming within a building that celebrates its own micro eco-system. And here's how.

Department stores are dead!
Long live department stores!

The headlines said it all:

Once the height of sophistication, the place to shop, socialise and dine, the department store proved unable to evolve to suit modern consumers.

The shift to online shopping was threatening both department stores and high streets, and then COVID-19 hit.

Debenhams set to close all 124 shops

Great Britain's high streets lost more than 17,500 chain store outlets in 2020

Confirmed: John Lewis shuts down 8 more stores

Now, institutional investors and landlords are racing to convert them into alternative uses to retain the commercial value of the asset.

Conversion to residential, predominantly rental apartments, leads the way, and in some cases, demolition will pave the way for new build.

Plans unveiled to demolish Debenhams in Northampton for hundreds of student flats

Residential, whether student, BTR, affordable, later living or for purchase, is clearly both a commercially viable option and much needed in terms of our housing shortage.

But if that's the sole focus and outcome for these buildings up and down our high streets, it won't re-energise our town and city centres.

Where's the pull, where's the interface with the public, where's the user experience? Faceless ground floor frontages, only accessible to those with a swipe card, run the risk of replacing one inflexible solution for the building, with another.

Alternative uses for academia are also emerging. Certainly, this makes the frontage more active, it draws the younger generation into the high street, but again the user interface is limited.

Gloucestershire University snaps up Debenhams store for campus expansion

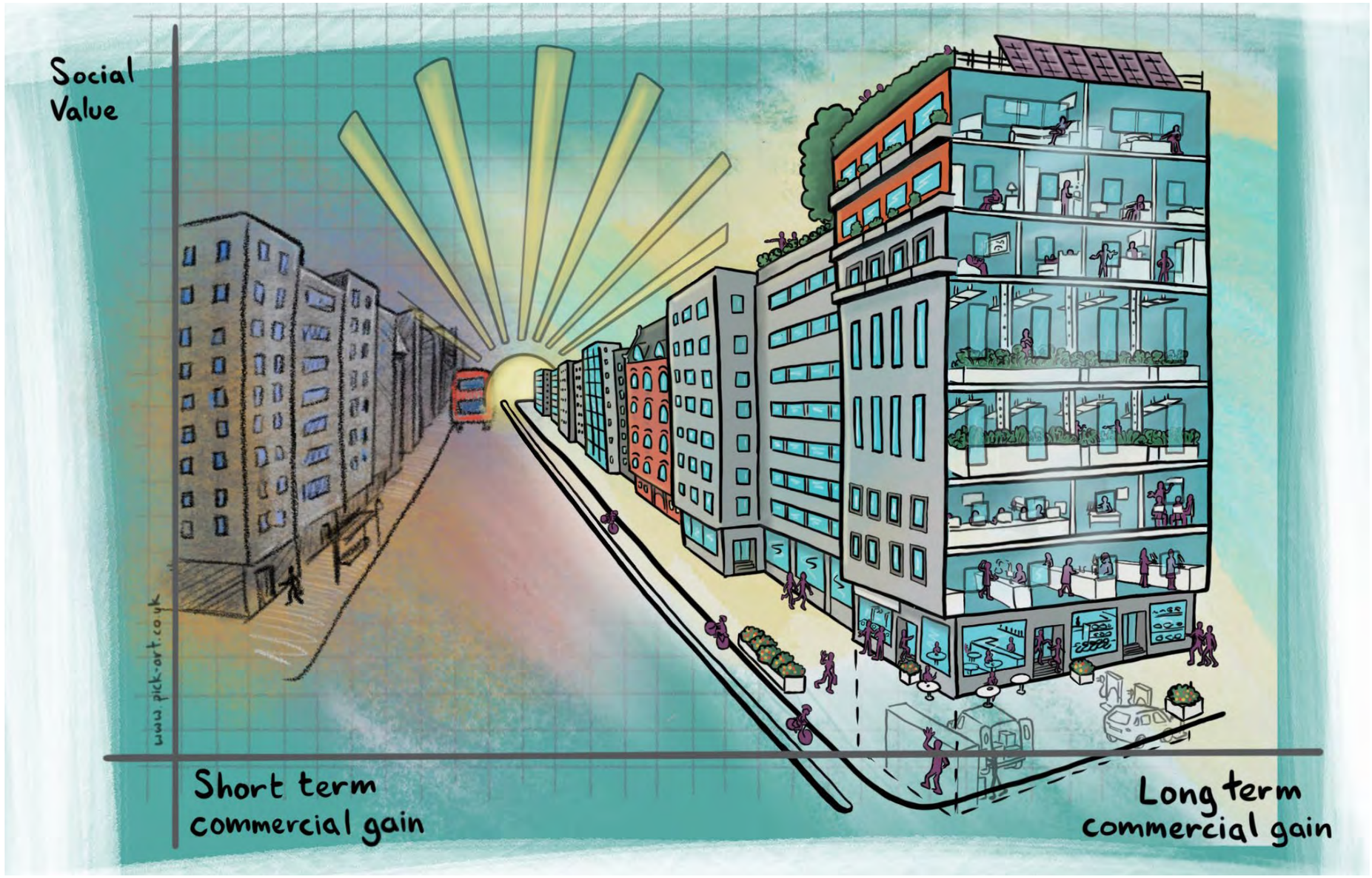
Our proposition is to look at the medium to long-term opportunity for the asset. Combining what the best of public and private partnerships can bring, and recognising the strategic importance of environmental, social and governance factors (ESG) in funding decisions.

Our vision benefits all involved, from the developers to the occupiers, while giving social value centre stage and optimising the space to generate revenue from unexpected sources.

With a focus on the key metrics for social value – employment and skills, business growth, community and the environment – our idea centres around vertical farming within a building that also offers accessibility to everyone through learning, enterprise and residential.

Introducing a new look ‘anchor’ building

Stripped back to the core and re-imagined to avoid the additional carbon emissions associated with demolition, our re-purposed and re-energised department store is now a fully-functioning, truly sustainable asset, anchored by a vertical farm and still driving footfall.



Ground floor

- Science-based interactive space – fun and educational to help people of all ages learn more about progressive farming techniques
- Food and beverage outlets – from café to fine dining, using ingredients farmed in the building
- Indoor farmers-market – encouraging the 15-minute walkable neighbourhood with the ability to buy the products grown upstairs

☑ Active frontage
☑ User experience
☑ Employment
☑ Community
☑ Education
☑ Commercial

First floor

- Academic research space for college students – ideally focused on farming techniques and STEM-based subjects
- Incubator space for R&D organisations – focused on farming technologies

☑ Education
☑ Employment
☑ Skills development
☑ Commercial

Middle floors

- Vertical farms – with technology employed to recreate the perfect conditions for healthy, nutritious fruit and vegetables, primarily for the immediate, local market

☑ Commercial
☑ Environment
☑ Employment
☑ Community

Upper floors

- Residential spaces – these could even be extended through permitted development rights, and offer accommodation for one or more from affordable, student, later living, BTR or private ownership

☑ Commercial
☑ Housing

Roof

- Community amenities – outdoor running track, clubhouse, gym
- Beehives – additional food production
- Solar PV – alongside other operational plant for the running of the building
- Rainwater harvesting – to capture water for the farming on the floors below

☑ Community
☑ Environment
☑ Commercial

Basement

- Battery storage – capturing the energy from the solar array on the roof, storing and using to reduce the energy demand of the building
- Last-mile logistics – housing a fleet of electric-powered bikes and small vans for local, last mile deliveries, including the crops farmed in the building
- Edge data centre – a small facility processing data and services as close to the end user as possible to reduce latency and improve user experience. The heat produced is recycled into the vertical farm above

☑ Environment
☑ Commercial
☑ Employment

Hydrock – Revolutionising the department store

Engineering the solution

As part of a progressive project team, including the funders, the local authority, architects, project managers, contractors and the like, this is a vision that engineers can lead.

Every department store will require a different solution depending on size, height and age. The more traditional builds from the 1960s are often wide but not so high, while more recent builds are taller and include more dramatic atrium heights.

To turn the vision into reality there are a number of practical areas that need to be explored:

- Understanding the existing structural loading and foundation design is key to identifying the level of intrusive enhancements required
- As part of a revised fire safety strategy, the opportunity is presented to upgrade the external cladding and create a safe and energy efficient façade
- The addition of renewable energy and storage options offers the opportunity to review all services and systems to create more energy efficient processes and improve building performance optimisation
- Real-time modelling of pedestrians and vehicle movement can help to shape the flow of people through the building and establish a safe and efficient means of access and exit for people and for electric vehicles from the basement into the surrounding neighbourhood
- A virtual soundscape design can help to establish the noise levels from the building and inform how the surrounding public realm can be influenced to mitigate any issues

It's called 'intervention', but these design changes and enhancements, which can be modelled and optimised through the development of a digital twin, offer a more practical and less-carbon intense way to evolve a department store for its next stage of life rather than demolition and re-build.

Vision into reality

Vertical farming isn't just a whim. In 2019, it's U.S. market value was $3.1bn and by 2027 it is estimated to be worth $16.8bn.

Conversations around food supply are also becoming increasingly regular. As climate change takes hold and major nations don't respond quick enough to curb emissions, traditional farming will fail more frequently, food supply will shorten and those geared-up for high-tech, non-weather dependent farming will have the advantage.

This model, detailed above, gives the local community access to food, as well as bringing homes, skills and job opportunities to town centres across the UK, and in a sustainable way.

We're excited about this pragmatic solution to some very real problems. With the increasing focus on sustainable and ethical investments, the time is now for investors and the built environment to seize the opportunity and re-energise our department stores and high streets.

- ☑ Active street frontage
- ☑ A community destination
- ☑ Employment space
- ☑ Learning space
- ☑ R&D space
- ☑ Supporting walking neighbourhoods
- ☑ Self-sustaining building
- ☑ Low-carbon
- ☑ Multi-purpose

Get in touch

Hydrock is an integrated engineering design, energy and sustainability consultancy. With over 20 offices across the UK, our purpose is to be a force for good, shaping places and communities that everyone can be proud of.

Our most recent multi award-winning projects include new premises for English National Ballet on London City Island, The Wave – a unique inland surfing lake, Llys Cadwyn a new multi-use development leading the regeneration of Pontypridd, and the new HQ for UK Hydrographic Office transforming the approach to workspace.

To discuss the future of department stores, or explore other areas in which we can help you, please contact:

Chris Bowie-Hill

Director of Innovation Delivery

e. chrisbowie-hill@hydrock.com

m. 07702 143319

To hear more about our thought leadership events and communications, drop your details to: events@hydrock.com

Hydrock

hydrock.com

ENGINEERING | ENERGY | SUSTAINABILITY