

KEYNSHAM
CIVIC CENTRE &
ONE STOP SHOP



BCO AWARDS 2015
CORPORATE WORKPLACE

EXECUTIVE SUMMARY

01



The new Keynsham Civic Centre & One Stop Shop has completely transformed the town centre in a way that far exceeds the expectations of a new corporate office development.

The redevelopment replaces outdated 1960s buildings, bringing new jobs and investment to the town centre with a new 68000sqft Council office, Library and One-Stop-Shop, 20,000sqft retail located around two new pedestrian streets, a market square, new car parking and highways improvements.

Key features of the project are:

- A landmark anchor scheme which forms a catalyst for the regeneration of the town
- Over 50% of the site area given over to new public space
- Innovative 'passive first' approach to sustainable design
- Full natural ventilation achieved on a noisy town centre site
- The first project to target a DEC A rating from the outset and using the BSRIA Soft Landings process to support its delivery
- An innovative hybrid Cross Laminated Timber frame
- A clear building organisation focussed around a 4 storey atrium containing a café, formal and informal meeting areas, 'touchdown' desks and social spaces
- High quality, low maintenance natural materials and cladding including standing seam brass, solid oak flooring and exposed CLT structure



1. PROJECT AIMS AND ENTERPRISE

The key project objectives were defined by the council as:

- Provide a building that is an exemplar in achieving low energy use during operation
- Enhance Keynsham's conservation area & improve the public realm
- Increase civic pride in a town which has suffered from recent loss of employment
- Produce a working environment with a 'one council' culture consisting of flexible and adaptable working spaces which are generally not department specific

Our challenge was to accommodate 9500m² space within a town centre on a constrained site and across a 9m slope which gives back to the town through the creation of new public space and amenities.

Rather than filling the site with a large low rise building with One Stop Shop on the ground floor and offices above we sliced through the site with two new pedestrian streets and made the buildings taller. This gave over 50% of the site over to 24 hour accessible public space.

Although this submission concentrates on the offices the physically separate One Stop Shop building is an integral part of the council workplace. Separating this building was a symbolic move to create community ownership in the council's redevelopment of the town centre.

We believe the project is the first in the country to target a Display Energy Certificate (DEC) A rating from the outset when supported by the Soft Landings process. The offices have already achieved an outstanding EPC rating of 5 (equivalent to 2.85kgCO₂/m²) - almost zero carbon and putting us well on course for our DEC A target.

To ensure the operational energy use is as close as possible to the design intent, we have followed the principles set out in the Soft Landings Framework. We developed an Energy Risk Register and a contractually binding energy budget. The contractor will stay engaged with the project for a two year aftercare period to optimise the energy performance.



2. UTILITY OF THE PRODUCT

"THE BUILDING HAS BEEN DESIGNED AS A FLEXIBLE WORKING SPACE AVAILABLE TO ALL OF THE COUNCIL'S STAFF, SO ALTHOUGH THERE IS A PROGRAM OF STAFF MOVES INTO DESIGNATED AREAS, MOST OF THE DESKS ARE FLEXIBLE AND WILL BE SHARED WITHIN AND BETWEEN THE TEAMS. IN ADDITION THERE ARE BOOKABLE MEETING ROOMS, INFORMAL SPACES FOR IMPROMPTU DISCUSSIONS, HOT DESKS AND COMFORTABLE BREAK-OUT SPACES ON EVERY FLOOR. THE HUB OF THE CIVIC CENTRE WILL BE THE LARGE ATRIUM AND CAFÉ ON THE FIRST FLOOR WITH COMFORTABLE SEATING FOR 100 STAFF TO WORK, TO MEET AND RELAX. IT'S A BUILDING FOR EVERYBODY."

Jo Farrar, Chief Executive

Slicing through the site with two new pedestrian streets has created three narrow wings of office accommodation running east-west. A service and circulation spine connects north-south through the wings. The site diagram aims to reconcile the urban grain of the existing high street with the optimum solar orientation for a naturally ventilated building.

The council identified a 3:2 desksharing ratio which resulted in a target of 455 workstations for 688 people. The departmental mix was unknown at the outset and deliberately ambiguous to ensure that the building provided a variety of types of spaces which could accommodate different team sizes, had different levels of security and acoustic privacy.

We achieved this by arranging four differently sized wings around a central breakout and touchdown spine. The wings accommodate teams of between 20 and 90 people, some are secure and enclosed while others are open balconied to the atrium.

Opportunities for working away from your desk were seen as very important and the breakout space and touchdown 'decks' have proved popular as informal meeting spaces.

The southern wing is designed to be completely sub-lettable should the council not need the space. Already the local police have taken a small office space making use of the rear entrance which is 24hr accessible. The buildings form with shallow plans and large windows makes it easily adaptable to other uses such as residential.

Specific enhancements to the office spaces include:

- A resource point in each wing including kitchen, meeting spaces and storage
- The open plan offices have general lighting to circulation routes and perimeters only. Local task lighting is provided to desks which provides greater user control and significant energy savings
- The FF&E design included the manufacture of 450 bespoke desks with a very robust stainless steel frame and trespa worktops

3. VALUE, COST & PROGRAMME

The project team were appointed in December 2010 and planning was submitted in February 2012. The project was tendered through a two stage Design & Build process based on a Guaranteed Maximum Price with gain share incentive. Start on site was December 2012 with handover and occupation in October 2014.

The upper floors of the offices utilised a Cross Laminated Timber (CLT) frame. This offered quick site erection, good airtightness and low embodied carbon.

In order to achieve natural ventilation an innovative hybrid structural frame was developed which consisted of steel portal frames with a CLT infil. 50% of the floor slabs were then changed from CLT to precast concrete planks to provide thermal mass. In order to future proof the building against future climate change and increases in occupation density we also incorporated cooling pipework cast into the concrete slabs.

The hybrid frame solution provided significant cost savings – by combining timber with steel the building achieved many of the sustainable benefits of a timber building with the structural efficiency of a steel frame.

The large meeting space / council chamber was moved out of the offices to the One Stop Shop building. This is still a council meeting space however locating it in the public building has provided benefits to the local community as well as becoming a landmark of the town centre regeneration.

The M&E systems are designed for ease of use and maintenance, as well as comfort and energy efficiency. This has required the design to be kept simple which delivers good value. The design builds on experience from previous low energy exemplar offices, removing unnecessary complexity and improving resilience.

The anticipated annual utility cost is £15,000 with an annual income of £23,000 from export of PV generated electricity and Feed-in-tariff (FIT), so a net annual income of £8,000.

Area Schedule	GIA m ²	NIA m ²
Lower Ground Floor	105	0
Ground Floor	636	0
First Floor	1,915	1,584
Second Floor	1,842	1,504
Third Floor	1,830	1,484
Total (Office Only)	6,328	4,572
Net to Gross	72%	

Cost Information			
		Total Cost (£)	Cost per Square Metre (£/m ²)
a.	Demolition / External Works	421,585	46.15
	Shell only	6,587,046	1,040.94
	Core and Fit Out as owner occupier (Full Fitout excl. Furniture)	5,025,905	794.23
b.	Base date	December 2012	
c.	Operating costs	Anticipated utility cost after feed in tariffs is a net annual income of £8000	



4. THE ACCOMMODATION

We have adopted a 'passive first' approach to every aspect of the architectural and services design.

Orientation: Narrow floor plans (circa 15m) optimised for cross ventilation with elevations orientated north and south.

Daylight: Larger windows to north facades maximise daylight without solar gain. Lightshelves to the south facades bounce light deeper into the plan improving daylight uniformity. All glazing is fixed meaning blinds can control daylight without cutting out ventilation.

Form: Pitched roofs create a thermal reservoir and drive passive stack ventilation. Opening clerestory windows are set back from the façade to shield them from traffic noise. Roofs are pitched south for photovoltaics.

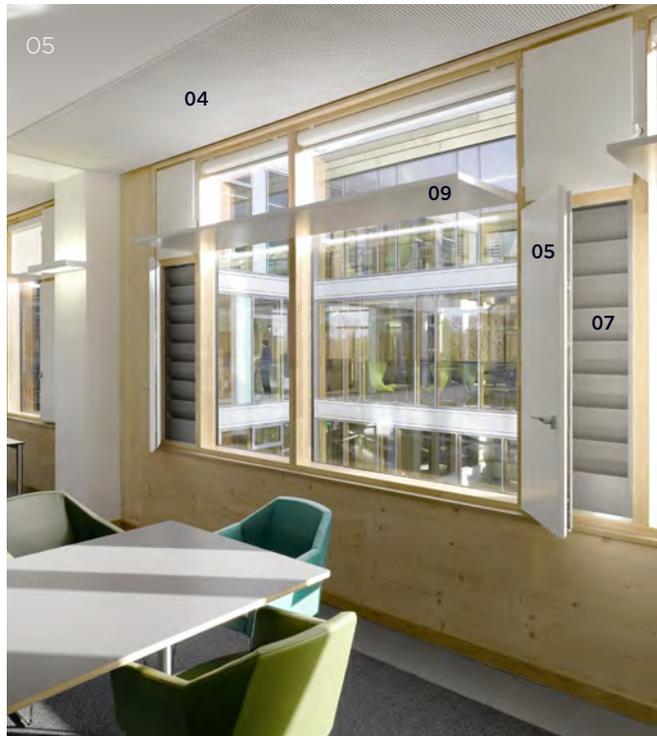
Ventilation: Voids were introduced to allow passive stack ventilation and are located adjacent to fully glazed areas of the north façade which allow daylight to penetrate deeper into the floor plate. There are high and low level vent doors, the bottom door is manually controlled and the top door is controlled by the BMS and provides both daytime ventilation and night purge. The manual doors will be locked in winter to reduce uncontrolled heat loss and let the BMS manage the background ventilation.

Structure: CLT significantly reduces embodied carbon and using precast concrete planks for 50% floor slab provides thermal mass.

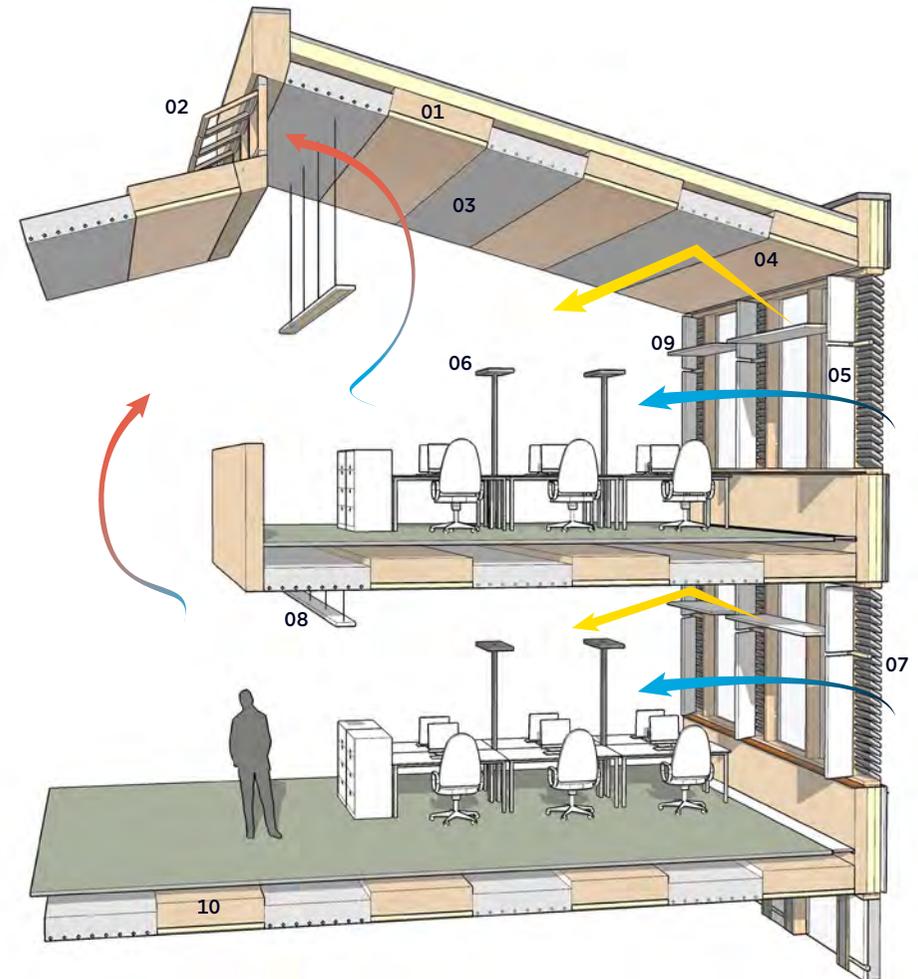
Acoustics: The town centre site has high external noise levels which ruled out traditional opening windows. We incorporated a 150mm deep acoustic louver into the window system with an inward opening door behind. To integrate the louver into the window system we used a composite window where the timber mullion is part of the thermal line. We had to work closely with the manufacturers to develop a bespoke window solution which is unique to this project.

Cooling: Air conditioning was avoided throughout. In meeting rooms where heat gains are higher we used natural ventilation combined with acoustically perforated radiant aluminium cooling sails. Future proofing is provided by casting cooling pipework into the concrete floor slabs.

4. THE ACCOMMODATION



- 01 Structure:**
Hybrid Cross Laminated Timber (CLT) and Steel Frame
- 02 Daylight + Ventilation:**
Clerestory windows exhaust warm air at roof level
- 03 Thermal Mass:**
Concrete Slabs with embedded cooling pipework make up 50% of floor
- 04 Acoustics:**
Perforated Spruce panels to control reverberation
- 05 Ventilation:**
Auto BMS controlled top ventilation door and manual bottom door
- 06 Lighting:**
Task lighting to desks which is user controlled and connected to a separate underfloor power track
- 07 Acoustics:**
Acoustic louvre absorbs low frequency traffic noise and allows secure night-time heat purge
- 08 Lighting:**
Automatic lighting only to circulation routes
- 09 Day Lighting:**
"Light Shelves" to south windows bounce light deeper into offices. Manual blinds to fixed glazing provide glare control
- 10 Services Distribution:**
Exposed soffits with raised access floor. "Kill Switch" enables shut down of PC's and lights at night to save power



05 Detail of typical window bay showing ventilation, daylight and acoustic strategies

BUILDING PLANS (1:500@A4)

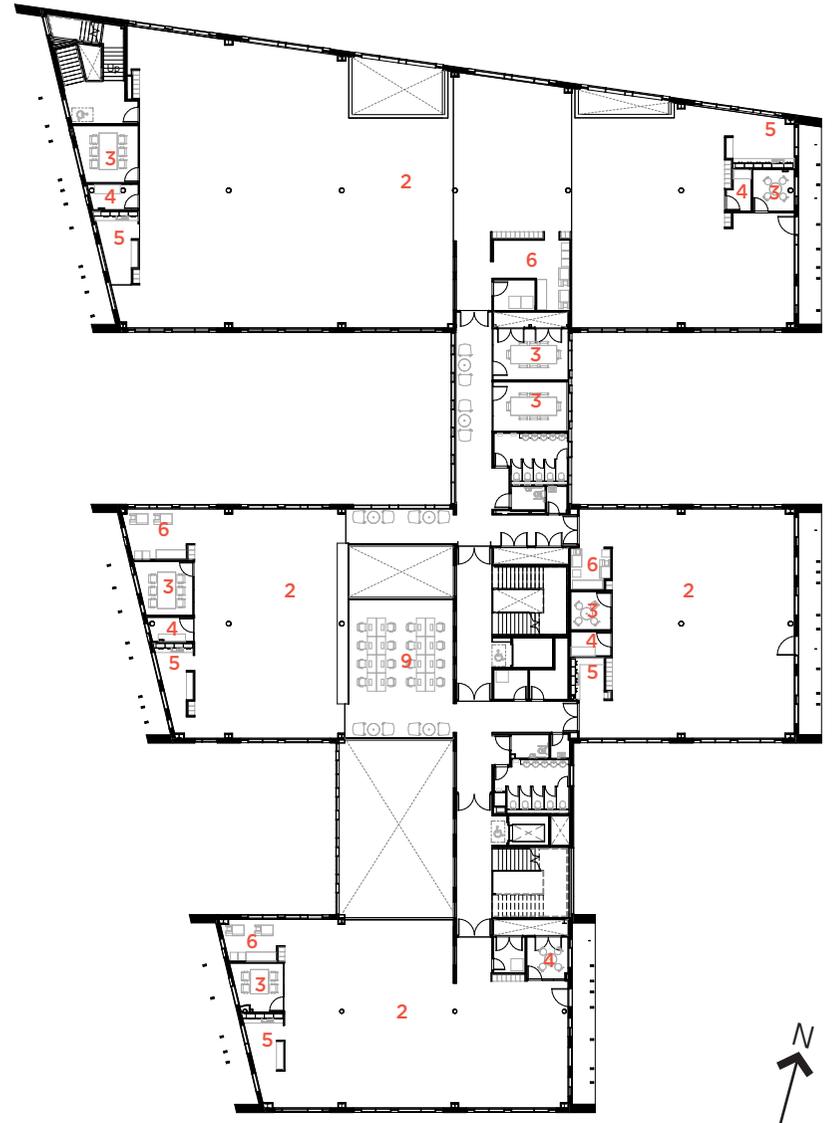
- 1 Entrance/Reception
- 2 Open Plan Office Space
- 3 Meeting Room
- 4 Confidential Room
- 5 Tea Point
- 6 Copy Area
- 7 Breakout Space
- 8 Cafeteria
- 9 'Touchdown' Deck
- 10 Showers
- 11 Server/Plant
- 12 Refuse/Stores
- 13 Retail
- 14 One Stop Shop
- 15 Multi purpose meeting & performance space



GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

ELEVATIONS & SECTIONS (1:500@A4)



Temple Street Elevation



New Pedestrian Street Elevation



Long Building Section

ELEVATIONS & SECTIONS (1:500@A4)



Sectional Elevation 1



Sectional Elevation 2

5. SUSTAINABILITY

Transport

Secure cycle parking is provided for 20 bikes alongside additional on street hoops for both bikes and motorcycles. Showers, lockers and drying facilities are provided. Over the next four years the councils Green Travel Plan aims to:

- Increase cycling from 1% to 5%
- Increase bus use from 3% to 8%
- Increase train use from 3% to 15%
- Increase walking from 8% to 16%
- Reduce the Single Occupation Vehicles from 80% to 51%
- Investigate the case for a shuttle bus and/or pool cars

Economic & Social Initiatives

The 20000sqft retail space below the council offices is let by the council and has already created 50 new jobs.

Environmental Performance and Assessment

The Council wanted the sustainability focus to be on achieving exemplar levels of low energy and carbon emissions during actual operation. Therefore instead of a BREEAM assessment, the following requirements were set:

- Follow the Soft Landings Framework, with a two year aftercare period
- 'A' rated EPC (Energy Performance Certificate)
- 'A' rated DEC (Display Energy Certificate) by the end of the second full year of operation
- Constructing Excellence Key Performance Indicators for Sustainable Construction

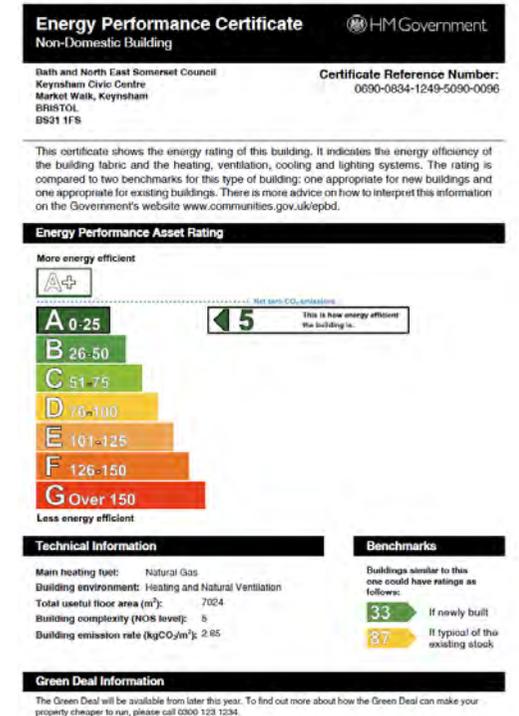
Additionally, a Sustainability Matrix was used to identify and communicate design targets covering a wide range of sustainability issues. This was updated as the project progressed.

The Soft Landings and DEC A strategy will be expanded on in section 6.

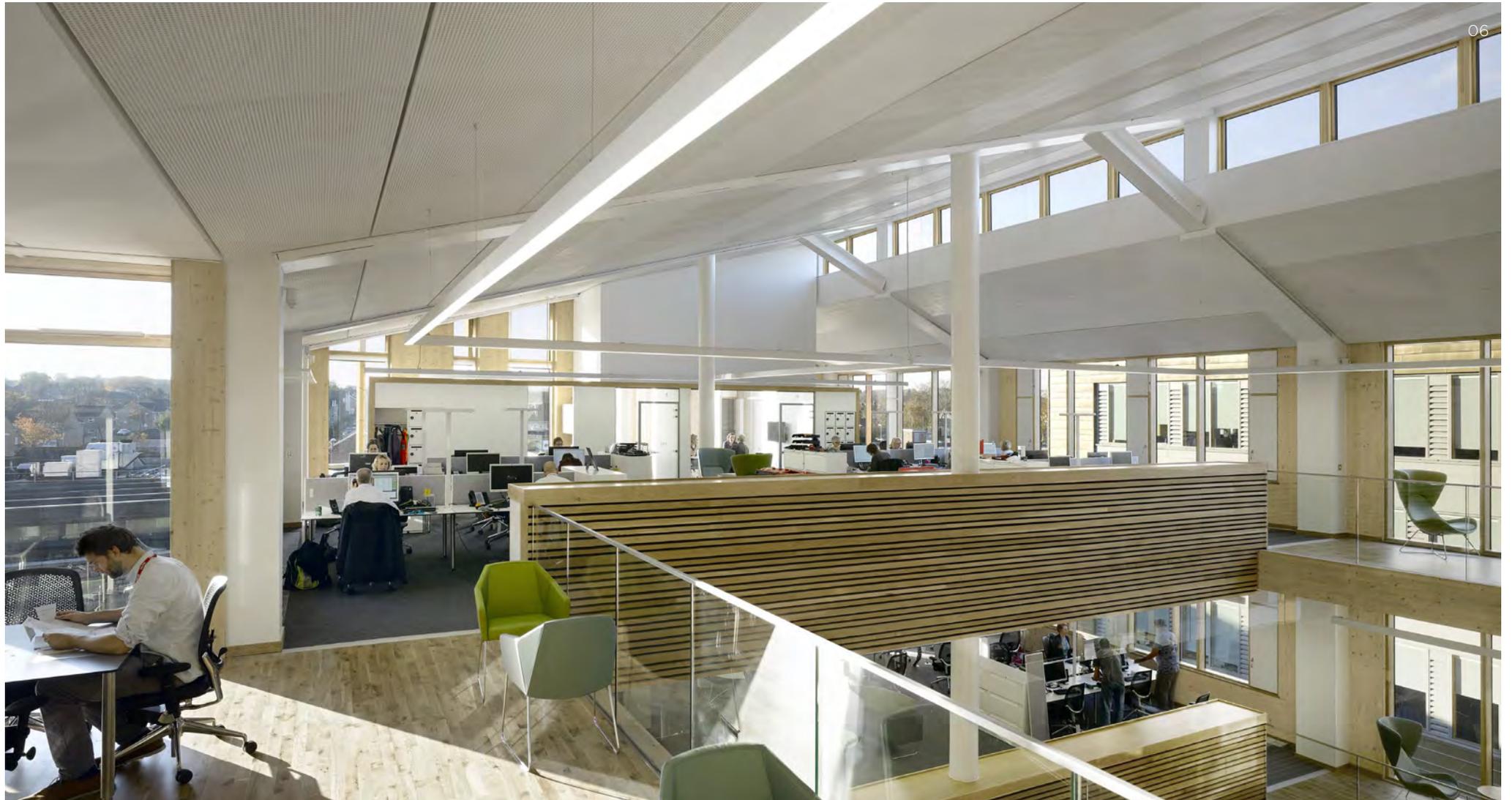
Specific Environmental Measures Include

- 1150m² photovoltaic panels providing 200,000kWh per year of electricity
- Water cooled servers provide 20% of the building's total heating energy requirement
- Thin Client technology reduces the need for cooling
- A Cross Laminated Timber frame which makes a sizable offset to the embodied carbon of an equivalent concrete frame building
- The council adopts a four waste stream recycling policy throughout its buildings

Sustainability Data Form: Note that under 'Gas (heating and hot water)' we have recorded the gas load which is NOT the same as the heating and hot water load, much of which is provided by recovered heat from the servers or from the heat pump.



06 'Touchdown Decks' and open plan office spaces arranged around a 4 storey atrium





Robustness was a primary driver in the local authority's brief. The principle was that the building must function and look good with minimum maintenance of the building envelope or environmental systems.

Long lasting low maintenance external materials were chosen which included stone for ground level and brass and aluminium cladding above.

Minimum maintenance also informed the environmental design and reducing the complexity and quantity of M&E systems became a mantra for the project team.

The Soft Landings Framework which we adopted focuses on delivering buildings that are straightforward to use, manage and maintain, with optimised energy efficiency and hence optimised cost in use. The project has fully adopted the Soft Landings approach at all stages, with a client Soft Landings champion, and the design team and contractor committed to two years of post-occupancy monitoring and support.

This will include the use of seasonal commissioning and occupant surveys.

During this period, the contractor is responsible for closely monitoring the energy use and optimising the performance.

As part of the strategy to target DEC 'A', the design team produced an Energy Risk Register which identifies potential unregulated energy uses early in the design stages so that they can be designed out where possible and monitored during occupation to minimise their impact on the energy costs. This has been managed throughout the construction process.

As the quality of commissioning can have a large impact on building performance and hence on operating costs, an independent Commissioning Manager was appointed to ensure the building was thoroughly commissioned. They will continue to be involved throughout the aftercare period.

The contractor has produced an illustrated guide for building occupants which explains how the building is intended to operate and how individual areas are controlled. Briefing sessions for occupants are taking place to ensure everyone understands the building.

7. CONTEXT

The form of the building has provided a massive improvement in public space within the town including new pedestrianised retail streets, a café terrace, play spaces and a market square giving back almost 50% of the site area to the public realm.

The position and orientation of the external spaces improves connections to the local memorial park and leisure centre, provides a south west facing sunny market square and new steps and ramps provide a wheelchair friendly accessible route across the sites 9m slope.

The decision to separate parts of the council office space into the standalone One Stop Shop has created a landmark Community Hall which provides a focal point for the High Street and a flexible multi-purpose space capable of holding community meetings, accommodating fitness, dance and activity classes on a semi-sprung oak floor; and hosting performances and films on retractable seating.

The community space is orientated to the high street and when lit up provides an exciting backdrop to the new market square.

For members of the public who need to access council services the separation of the One Stop Shop gives the community a sense of ownership of the building and makes the council feel more accessible.

The project has also been able to fund the restoration and display of a significant Roman mosaic under a glass floor for public display.

The office spaces benefit from the elevated site position which provides stunning long distance views across the town and local countryside.

Office workers arrive into a generous reception which leads up directly into the main breakout atrium around which the office spaces are organised. Extensive glazing makes this a bright and transparent hub to the building. Views across voids and through windows make the space feel connected and engaging.





8. EFFECTIVENESS AS A WORKPLACE

The council undertook a workplace assessment and concluded that they would adopt a workspace sharing policy of 3:2.

The building has allowed the council to rationalise its offices from 12 down to 4 with the majority of staff now based in Keynsham.

Providing flexible working areas was key to their workplace transformation as it allows flexible working away from a person's 'base' office. For this reason the large 185sqm breakout space and two 'touchdown decks' were incorporated within the atrium.

These function as the heart of the new building and careful consideration was given to the arrangement of spaces and voids to make visual and physical connections diagonally through the atrium. Movement around the building requires the constant crossing and reconnection with this space which creates opportunities for meetings and social interaction.

This is one of the most successful areas of the building and the visual connection between circulation spine and the voids has been particularly well received by the building occupiers.

Each wing has a resource wall on the west elevation containing tea point, copy area, meeting room, confidential call room, recycling facilities, lockers and coat storage. It is capped with a partially free standing feature oak wall. It is located on the west elevation to block the low afternoon sun which causes overheating.

Another innovative feature which supports the DEC A target is the approach to out of hours working. The building has official opening hours of 8am until 7pm and anyone working outside of these hours will do so in a designated location. This way the heating, lighting and power to the remaining areas will be shut down to reduce energy waste. The building managers will control this through local 'kill switches' and zone controls.

"I AM REALLY IMPRESSED WITH IT. THE LIGHT AND SPACE REALLY HITS YOU. THERE SEEMS TO BE MORE SPACE HERE THAN OUR OLD OFFICE. IT WILL BRING EVERYONE TOGETHER IN A WAY WE HAVEN'T BEEN ABLE TO BEFORE."

Dave Mehew, Audit Team Leader

"IT'S ABSOLUTELY STUNNING - I WOULDN'T HAVE IMAGINED IT POSSIBLE!"

Paul Hiscott, Group Assistant

"I THINK IT'S GREAT THE COUNCIL HAS BEEN SO BRAVE TO BUILD SUCH A MODERN PROGRESSIVE BUILDING FOR US TO WORK IN."

Duncan Kerr, Senior Employment and Skills Officer



9. LIFTING THE SPIRITS

The Keynsham Civic Centre & One Stop Shop aspires to the highest standards of passive environmental design and hopes to be one of the lowest energy consuming public buildings in the country. The project is the first to target an 'A' rated Display Energy Certificate by using Soft Landings to support its delivery. Other innovative and unique features include the integration of embedded cooling pipework, acoustically louvered natural ventilation and a hybrid CLT structural frame.

By necessity a key part of the brief revolves around the environmental principles in order to meet the onerous energy targets but while the building could have been a utilitarian expression of optimum floor depths and mono pitch roofs we have strived to create spaces which are dynamic and complex with stepping atria and diagonal views through four storeys of accommodation.

A solid exposed timber spine wall which is heavily perforated with voids and glazing ties the three wings together and physically and visually connects the office spaces back to the atrium.

The natural ventilation strategy is expressed by a skin of brass cladding which wraps up and splits open to create a striking roof profile with clerestory glazing for natural ventilation.

The project also makes a huge contribution towards improving the public realm within the town centre. By moving the main large council meeting space out of the offices and into the One Stop Shop this allows it to double up as a community hall providing a new public amenity.

While this project is principally about providing a new office building, it capitalises wherever possible on opportunities to spark regeneration, enhance the external environment, improve connectivity and instil community ownership in the development.

It sets a high bar for future development within the county, creating an impressive precedent by a local authority which aims to lead by example.

