

The design process - mobility hubs realised

Process, illustrations, and costings
for five mobility hub types



Introduction

The work in this document is the first time that a thorough design process has been undertaken on mobility hubs in the UK. This document describes the design and delivery process that can be used by built-environment professionals to further their understanding of what a mobility hub is, how it is designed what it may cost the elements that make up a mobility hub.

Mobility hubs are highly visible, safe, and accessible spaces where public, shared and active travel modes are co-located alongside improvements to public realm, along with community facilities where relevant. The redesign and reallocation of space away from the private car enhances the experience for travellers and creates a more pleasant environment for everyone.

Technological advances have fed into the recent explosion in shared transport modes and services, led by advancements in smartphone technology. These innovations coupled with long term growth trends including changed travel patterns due to the pandemic, climate awareness and policy implementation have all seeded changes in how we travel in the UK.

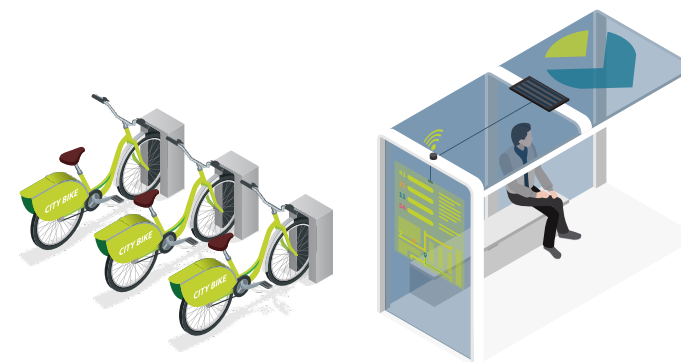
The policy landscape has shifted in response to the climate crisis including legal commitments following the Paris Agreement 2015 from the UK, Scottish, Welsh and NI Govts on decarbonisation. However, transport is still the biggest emitter in the UK by sector. The Climate Crisis provides the over-reaching context – delivery of sustainable transport hubs is fundamental to how we change future generations' travel choices. The current policy landscape is rich to deliver mobility hubs in Scotland but is at the start of the delivery process.

At CoMoUK, we are clear that mobility hubs can deliver widespread benefits, as already shown in countries such as the Netherlands, USA, Germany, and Belgium. The UK Government has given backing to the concept using funding from the Transforming Cities Fund and Future Transport Zones to create demonstration schemes that show how the benefits mobility hubs can bring.

There are three questions asked of a mobility hub:

- *What does it look like?*
- *How much does it cost?*
- *What is in it and why shared mobility?*

This document seeks to provide an answer to each of these questions.



Costing the design process

NBM Construction Cost Consultants used the latest CIBSE price indexes to establish up to date costings. It should be noted that these costs are subject to market fluctuation and relate directly to the prototype designs themselves. However, they should be particularly useful to stakeholders looking to establish feasibility and viability of a hub.

Mobility hubs realised

While this was a theoretical feasibility study, the designers used real places to create fictional but plausible settings for each of the five typologies:

- City centre hub was based on Trongate, Glasgow
- Transport Corridor hub was based on Sauchiehall St, Glasgow
- Business Park/housing development hub was based on Castle Business Park, Stirling
- Suburbs/Mini hub was based on Milngavie train station
- Market town/tourism hub was based on Stonehaven train station

The typologies are scaled by size and are designed to be part of a network of hubs.



Large interchange or city centre hub



Transport corridor hub



Business park or new housing development hub



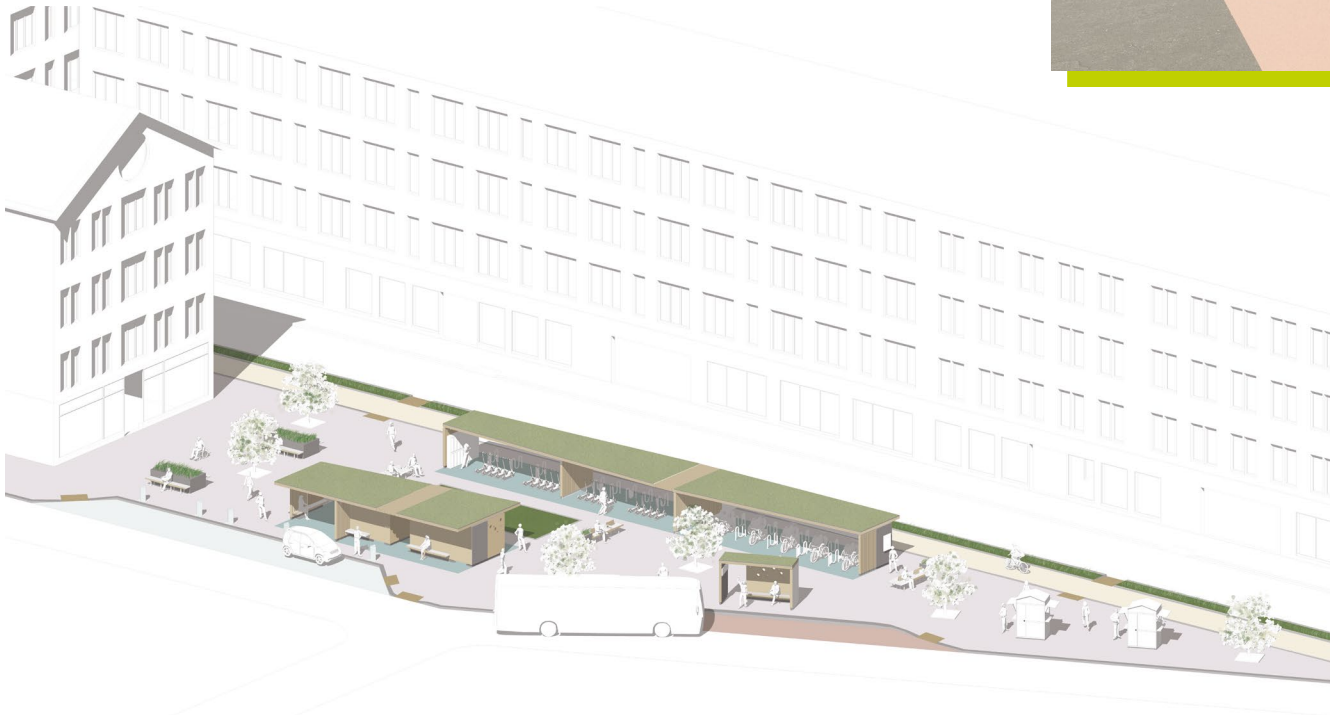
Suburbs or mini hub



Small market town or village/tourism hub

Large interchange or city centre hub

In this example, we can see the bus interchange, a station in the background and the modes and information signage of the hub. The hub is a single object within a built environment context, intended to give users an understanding of place and purpose.

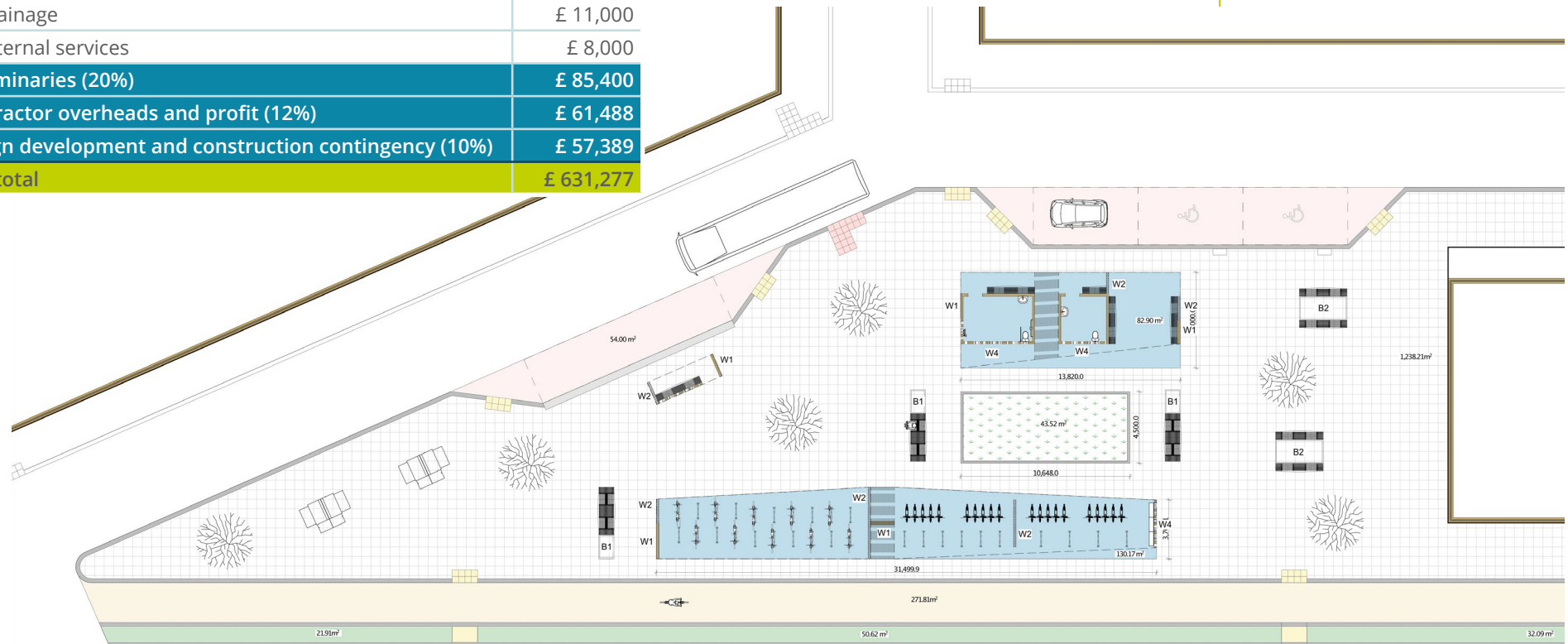


It is important to note that for the purposes of this exercise we briefed a common design language through scale and materials. For instance, you can see the cross-laminated timber structure and green roofs.

Large interchange or city centre hub - Cost information

1.1	Works cost	£ 427,000
A	Individual structures	£ 151,000
B	External works and drainage:	
B.1	Site preparation	£ 62,000
B.2	Surface treatments	£ 158,000
B.3	Planting	£ 9,000
B.4	Fittings and furnishings	£ 28,000
B.5	Drainage	£ 11,000
B.66	External services	£ 8,000
1.2	Preliminaries (20%)	£ 85,400
1.3	Contractor overheads and profit (12%)	£ 61,488
1.4	Design development and construction contingency (10%)	£ 57,389
	Hub total	£ 631,277

The city centre design uses existing public space around a large public transport hub to allow 'first & last mile' connectivity that helps to reduce private car usage in urban areas.



Transport corridor hub

Wayfinding and accessibility are at the forefront of all the design prototypes and this view shows both these elements at the forefront of the design. City centre and large town hubs can offer users a positive experience of shared transport and the interchange with public transport.



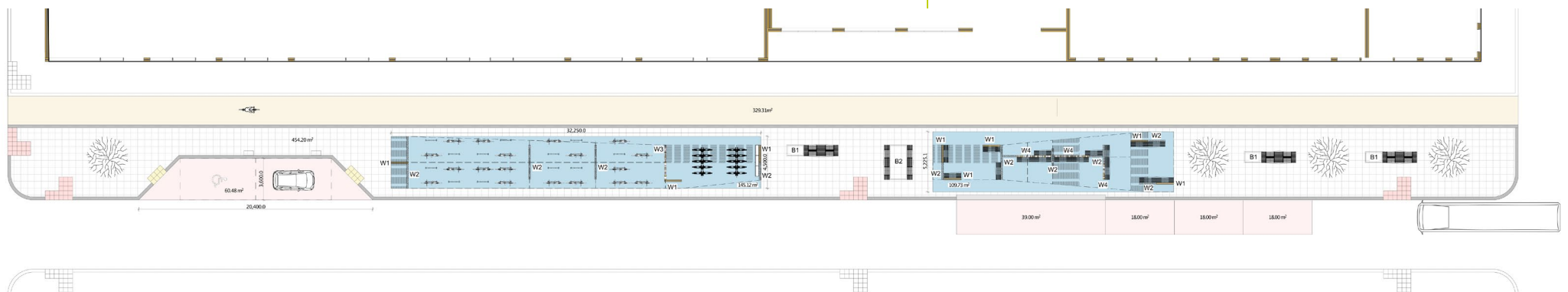
The linearity of the setting is clear in this image. Whilst the ideal setting for this typology would group the hub together, the designers have shown how best to deliver a mobility hub on a major thoroughfare in a linear fashion.

Transport corridor hub - Cost information

1.1	Works cost	£ 338,000
A	Individual structures	£ 142,000
B	External works and drainage:	
B.1	Site preparation	£ 33,000
B.2	Surface treatments	£ 121,000
B.3	Planting	£ 6,000
B.4	Fittings and furnishings	£ 24,000
B.5	Drainage	£ 9,000
B.66	External services	£ 3,000
1.2	Preliminaries (20%)	£ 67,600
1.3	Contractor overheads and profit (12%)	£ 48,672
1.4	Design development and construction contingency (10%)	£ 45,427
	Hub total	£ 499,699



A hub of this typology may be found on a major arterial route. In Glasgow, it might be Sauchiehall Street or Great Western Road, and in Edinburgh Shandwick Place or Lothian Road are potential locations that fit the typology.



Business park or new housing development hub

The green elements of the hub offering are especially important. Trees break up surfaced areas and grass offers somewhere to sit or for children to play. The green roofs are visually attractive and offer insulation against both heat and cold.

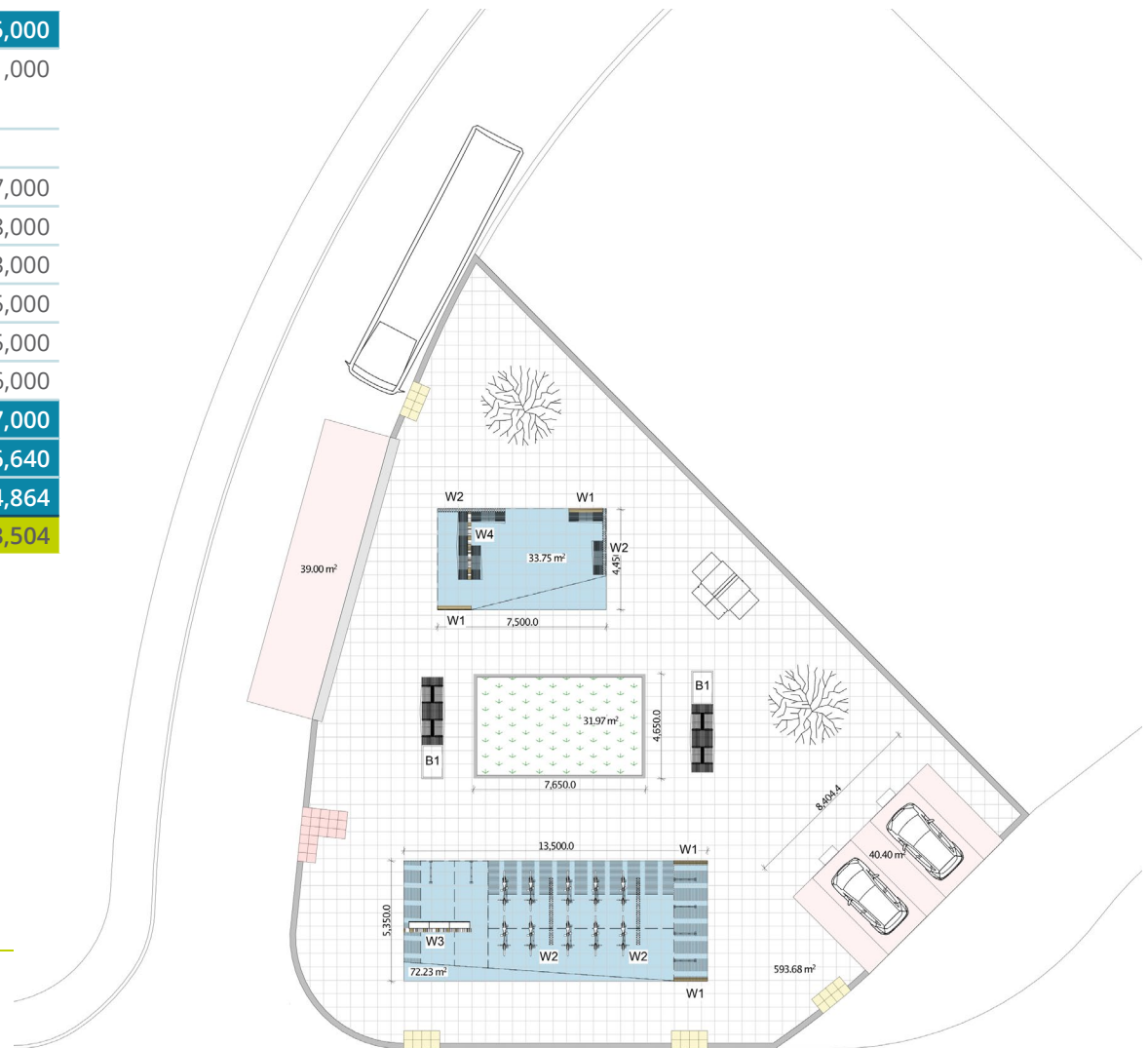


The compact nature of the hub in this image demonstrates that the infrastructure need not be extensive but should be homogenous and give a sense of place. In the context of a business park the hub becomes a place to gather after work in a pleasant environment that offers shelter and amenity.

Business park or new housing development hub - Cost information

1.1	Works cost	£ 185,000
A	Individual structures	£ 71,000
B	External works and drainage:	
B.1	Site preparation	£ 27,000
B.2	Surface treatments	£ 58,000
B.3	Planting	£ 3,000
B.4	Fittings and furnishings	£ 15,000
B.5	Drainage	£ 5,000
B.66	External services	£ 6,000
1.2	Preliminaries (20%)	£ 37,000
1.3	Contractor overheads and profit (12%)	£ 26,640
1.4	Design development and construction contingency (10%)	£ 24,864
	Hub total	£ 273,504

This layout is scaled to meet the commuter needs of a business park or could be used in the context of a new housing development, acting as a travel hub for the development.



Suburbs or mini hub

There is real opportunity to engage the community on all things sustainable through a mobility hub. It is a new way of moving around that disregards the car whilst making transport inclusive. By providing quality infrastructure and services, new users can be enticed to try the hub and leave the car at home.

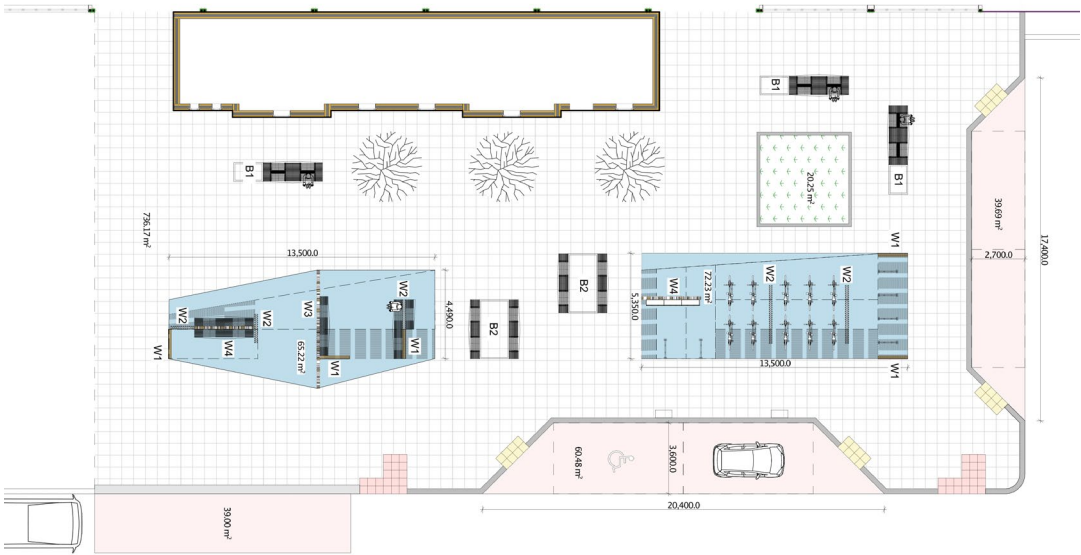


The compact nature of the hub is again in evidence. The materials used are intended to emphasise the green, sustainable nature of the transport provision at the hub but go beyond that to offer a quality, local space for people to congregate and socialise. Existing local services should not be replicated but through community engagement, the services offered by the hub should complement and enhance those already available.

Suburbs or mini hub - Cost information

1.1	Works cost	£ 225,000
A	Individual structures	£ 72,000
B	External works and drainage:	
B.1	Site preparation	£ 35,000
B.2	Surface treatments	£ 72,000
B.3	Planting	£ 5,000
B.4	Fittings and furnishings	£ 28,000
B.5	Drainage	£ 5,000
B.66	External services	£ 8,000
1.2	Preliminaries (20%)	£ 45,000
1.3	Contractor overheads and profit (12%)	£ 32,400
1.4	Design development and construction contingency (10%)	£ 30,240
	Hub total	£ 332,640

This layout serves a housing estate, local centre, or the like. The hub offering should not replicate or take the place of existing services in the neighbourhood. The design language is consistent with the large hub types but scales the response to the suburban surroundings using a common palette of materials to allow users to recognise the hub.



Small market town or village/ tourism hub

There is a strong link to the 'first and last mile' solutions – as well as the bus, there is bike share and an EV car club along with journey planning information.



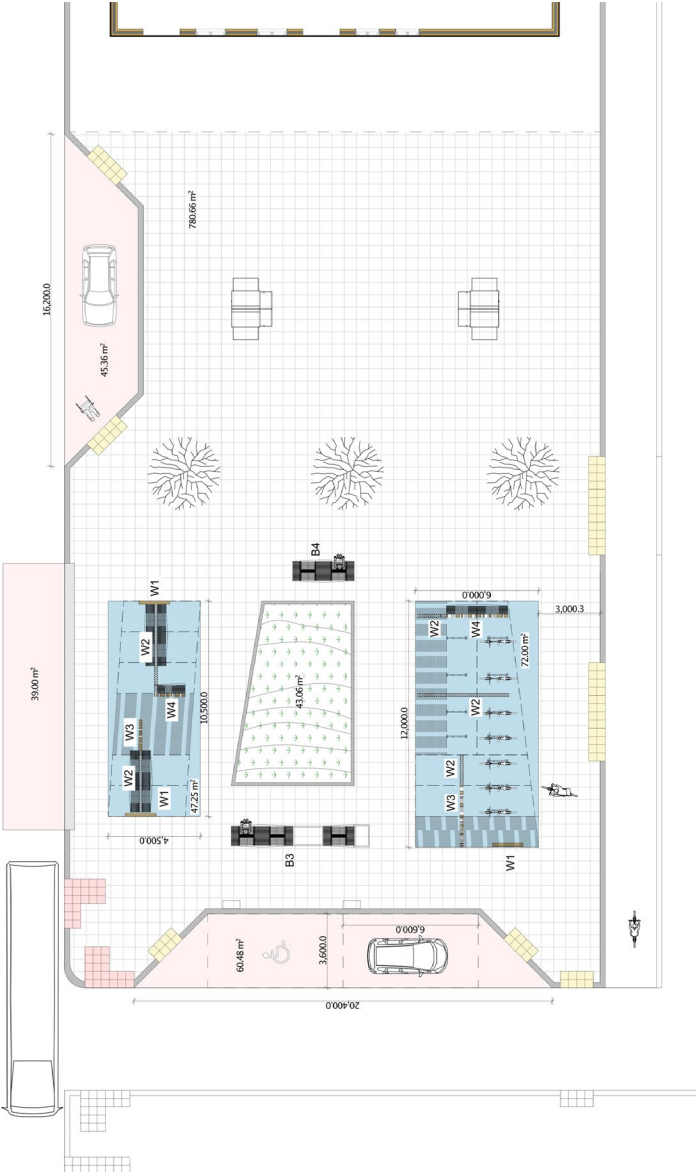
The hub as the centre of the town: as small market towns struggle for viability the mobility hub can offer footfall to the economic centre of the small settlement. Public space becomes activated and enriched by bringing communities to one point to start their journey on public transport or to use services that have sprung up around the hub.

Small market town or village/tourism hub - Cost information

1.1	Works cost	£ 180,300
A	Individual structures	£ 71,000
B	External works and drainage:	
B.1	Site preparation	£ 23,000
B.2	Surface treatments	£ 56,000
B.3	Planting	£ 4,500
B.4	Fittings and furnishings	£ 15,500
B.5	Drainage	£ 5,000
B.66	External services	£ 5,250
1.2	Preliminaries (20%)	£ 36,200
1.3	Contractor overheads and profit (12%)	£ 26,064
1.4	Design development and construction contingency (10%)	£ 24,326
	Hub total	£ 266,890



This is where we have combined the two typologies. Again, you can see the link with public transport – the bus in the background – there is bike share and an EV car club along with journey planning information.



Cost comparison

The costings provided by NBM Consulting through Concept Design (RIBA Stage 2) are indicative only, relating to a typical developmental stage in the design. The purpose of this design project is to benchmark costs for an appropriate standard of mobility hub in the UK. The mobility hubs modelled in this process should allow interested parties to gauge approximate costs relative to their own projects. The five examples meet the CoMoUK accreditation criteria for mobility hubs and act as an exemplar design standard for organisations wishing to understand what this infrastructure might look like, relative to cost.

As with all costings exercises there are exemptions made by the cost consultants based on the stage of development of the projects. The main exemption relates to inflation which is pegged at quarter two of 2022. Additional costs beyond those stated in the document include WCs, design and legal fees as standard construction industry practice. Site acquisition is assumed to be cost neutral for the purposes of this exercise.



		Large interchange or city centre hub	Transport corridor hub	Business park or new housing development hub	Suburbs or mini hub	Small market town or village/ tourism hub
1.1	Works cost	£ 427,000	£ 338,000	£ 185,000	£ 225,000	£ 180,300
1.2	Preliminaries (20%)	£ 85,400	£ 67,600	£ 37,000	£ 45,000	£ 36,200
1.3	Contractor overheads and profit (12%)	£ 61,488	£ 48,672	£ 26,640	£ 32,400	£ 26,064
1.4	Design development and construction contingency (10%)	£ 57,389	£ 45,427	£ 24,864	£ 30,240	£ 24,326
	Hub total	£ 631,277	£ 499,699	£ 273,504	£ 332,640	£ 266,890

Accreditation process

Mobility hubs are taking different forms: from large city centre hubs to suburban mini stations, from those tailored to rural contexts to those centred on tourism. CoMoUK has developed a cohesive set of standards for assessing the quality of mobility hubs.

The standards incorporate six factors which should be considered for successful mobility hub design:



The CoMoUK accreditation guidance is available at:
<https://como.org.uk/mobility-hubs/accreditation>

Visibility and accessibility

Hubs need to be part of the clearly identifiable transport network with services which are easily accessible by all

Choice of sustainable modes

These should include public and shared modes as well as consideration of pedestrians

Ease of switching between modes

This applies in both physical and digital terms, linking the use of different modes



Safety

The design and facilities should ensure traveller safety is a key factor

Practical facilities

Clever design will consider what non transport practical additions can be included

Visual, social, and community appeal

A successful mobility hub will enhance the area visually and provide a contribution to the social and community fabric

Getting the design brief right

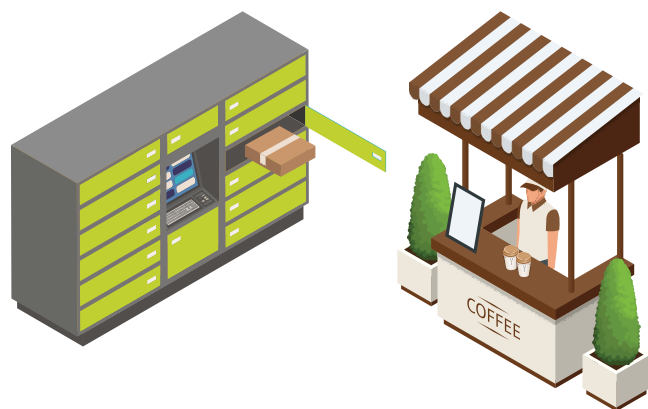
As with all infrastructure and built environment processes, a clear, concise brief will enable the designers to deliver a quality scheme on budget and programme.

It is important to understand the preferred delivery method of the organisation and how to best translate this into the brief. A clear understanding of preferred contractual route and the delivery methodology that entails from the procurement process must be signposted within the brief.

The brief is a list of project requirements, but it must also establish outcomes and set the tone of the project for the

designers. With sustainability at the heart of the mobility hub offering, this should be reflected clearly in the brief. Terms that support this outcome, such as 'locally won' and 'environmentally friendly' must be backed up with clear definitions as to what these terms mean and how this should be delivered in the project.

This process diagram offers a summary of the brief-writing process used to deliver the brief given to the designers. The brief should deliver the outcomes that have been established through community engagement and stakeholder consultation.



1

Read and understand the CoMoUK accreditation process

2

Discuss the mobility hub offering with the in-house project team to establish scope

3

Start in-house workshopping the outline brief, establishing scope, location and modes

4

Establish tender route for design process

5

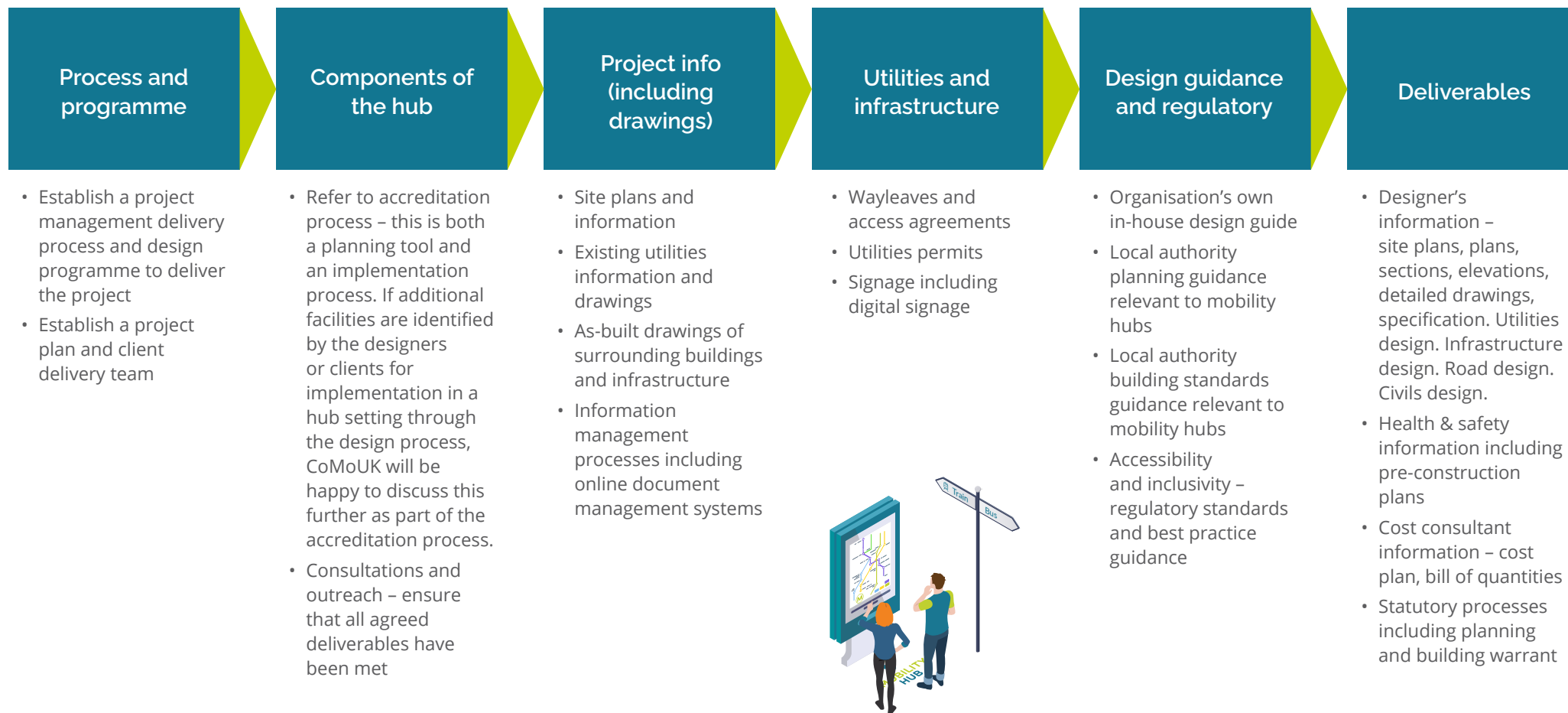
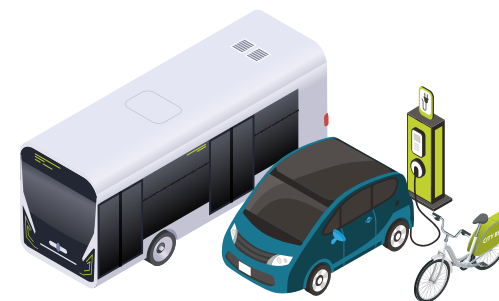
External workshop with all stakeholders as early as possible in the process, including community groups

6

Deliver written brief - refer to flow chart on next page

Mobility hub procurement

The brief itself includes all the information that can be given by the client to the designers to support the required outcomes of the project.



Design guidance

CoMoUK believe that shared transport should be an inclusive experience for all regardless of age, ability, or background. Hub providers should promote inclusion as a central tenet of the hub's offering.

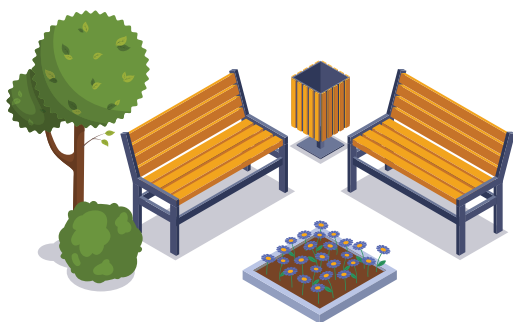
Accessibility involves designing places and services to optimise access whereas being inclusive is about giving equal access and opportunities to all users of the hub regardless of age, ability, or background.

Inclusive shared transport modes should be within the hub's offering. The following information should be

considered and implemented where possible to maximise the inclusivity of the hub through a process of community consultation and engagement with local accessibility and disability groups.

Some of the guidance below is general in nature but has specific accessibility and inclusion advice included.

CoMoUK will continue to add suitable and relevant guidance to this page. If you know of guidance or have best practice that you wish to share with us for inclusion in this document, then please do get in touch.



Guidance	Description
BS 8300-1:2018 - Design of an Accessible and Inclusive Built Environment Part 1: External Environment Code of Practice	BS 8300 Part 1 & Part are statutory guidance documents to achieve compliance with the Equalities Act 2010 and should always be referenced by designers, organisations and operators when establishing and running an offering to the public in the external environment (Part 1) and the built environment (Part 2) to ensure accessibility and inclusivity for all.
BS 8300-2018 - Design of an accessible and inclusive built environment Part Buildings. Code of Practice	
DfT Cycle infrastructure design (LTN 1/20)	Guidance for local authorities on designing high-quality, safe cycle infrastructure.
Department for Transport: Gear Change a Bold Vision for Cycling and Walking	The UK government's central policy document on active travel with guidance.
Changing Places facilities	Changing Places Toilets are enhanced, fully accessible toilets designed to enable use by people with complex needs who cannot use standard accessible WCs.
Inclusive mobility: a guide to best practice on access to pedestrian and transport infrastructure	Guidance on designing and improving the accessibility and inclusivity of public transport and pedestrian infrastructure.
RNIB Seeing Streets Differently	Recommendations for Local Authorities and Department for Transport on how to make streets inclusive for blind or partially sighted persons.
Wheels for Wellbeing - Guide to Inclusive Cycling	An accessible guide on the basic principles of inclusive cycling.
Transport for All	Guidance on inclusivity in transport.
Cycling for All	Guidance on inclusivity in cycling.
Guide Dogs Street design guidance for local authorities	Guidance and recommendations to designing streets that remain accessible for people with sight loss.

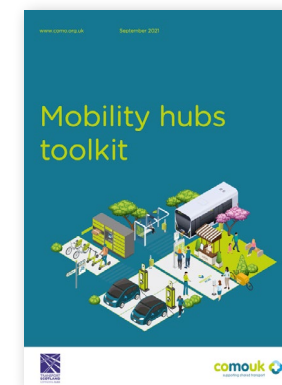
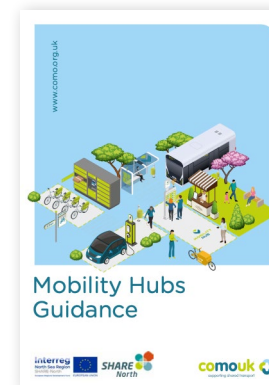
Conclusion

The journey to deliver a successful, ambitious and effective hub is never going to be a straightforward one; very few built environment infrastructure projects are. However, if we are to reduce car dependency in the UK and offer genuinely alternative ways to move around our towns, cities, and rural areas we must seek different ways of delivering transport. Mobility hubs can help improve both our transport options and the public realm in which they sit.

Please do get in touch at info@como.org.uk if you need further advice or wish to share your experience of the mobility hub design process.



Further reading



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