

WARD: Hotwells & Harbourside

SITE ADDRESS: Ferro Wapping Wharf Bristol BS1 6GW

APPLICATION NO: 21/00288/F Full Planning

DETERMINATION DEADLINE: 13 August 2021

Removal of former steel and wood construction providing additional residential accommodation above the deck level of the existing concrete barge.

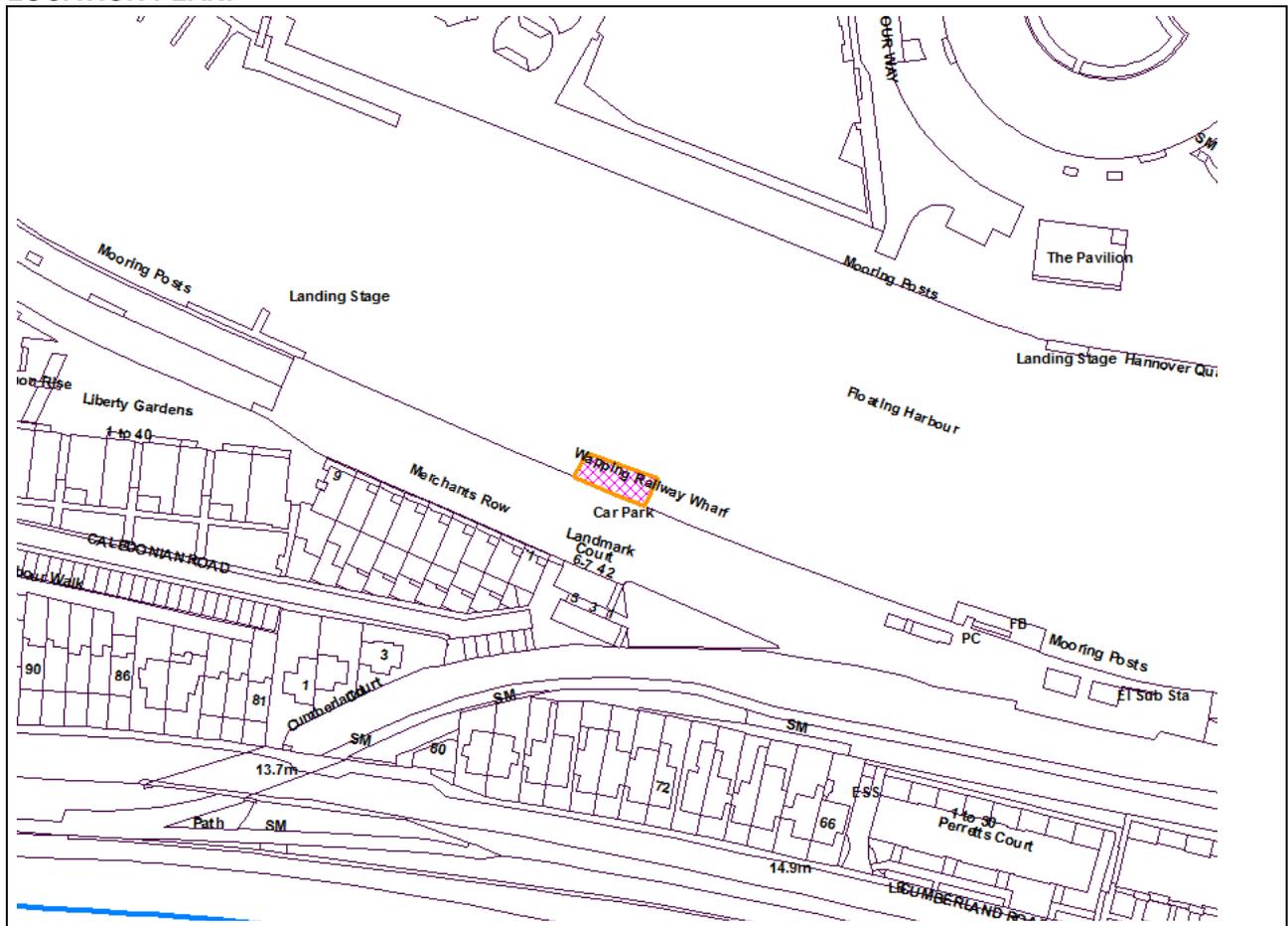
RECOMMENDATION: Refuse

AGENT: Point Consultancy Ltd

APPLICANT: Trevor Gray
Ferro
Wapping Wharf
Bristol
BS1 6GW

The following plan is for illustrative purposes only, and cannot be guaranteed to be up to date.

LOCATION PLAN:



Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

SUMMARY

This application has been brought before committee because it is recommended for refusal, however it has generated a lot of public interest (51 supporting comments at the time of writing) including from the former local ward councillor. The applicant took ownership of the Ferro in 2016, which was historically a floating grain barge before being converted to a one bed houseboat. The applicant subsequently made changes to extend the overall accommodation creating a three bedroom houseboat. The majority of the work has been carried out with just the cladding to be applied and therefore the applicant is seeking retrospective consent for the works which have occurred to date and for the proposed cladding.

It is acknowledged that the applicant is seeking to renovate a houseboat that was in a state of poor repair and modify the internal layout to make the accommodation fit for purpose. However, officers have serious concerns about the visual impact on heritage assets that would result from a visually imposing barge being moored within a prominent location to Wapping Wharf and this part of the City Docks Conservation Area. The applicant is also currently in discussions with the Harbour Authority over the resulting design of the structure to date, however this is a separate legal process which has no bearing on planning matters.

Committee members are asked to carefully consider the design and appearance of the 'Ferro' and to balance impacts on heritage assets of this with the benefits of the proposal. The Ferro is currently moored adjacent to Wapping Wharf opposite 10 Cannons Way overlooked by Merchant Row and Landmark Court. The houseboat can be easily seen from a number of vantage points including the area arounds Lloyds Amphitheatre opposite.

SITE DESCRIPTION

The application site is situated adjacent to Wapping Wharf north of the flatted development at Landmark Court, Merchants Row and Museum Street, south of Hannover Quay, east of the SS Great Britain and west of M Shed and the Matthew. The Ferro is moored amongst residential crafts varying in style and size including the commercial vessel Kyle Blue hostel boat and Noble Mast which is moored opposite. The site lies within the City Docks Conservation Area and within the setting of a number of listed assets, including the Floating Harbour Quay Walls and bollards (including to Wapping Wharf), and the Fairbairn Steam Crane. The site lies within the Harbourside neighbourhood, as defined in the Central Area Plan (2015).

RELEVANT HISTORY

According to the supporting statement, the 'Ferro' was originally built in the mid-20th century for use as a grain elevator dumb barge at Avonmouth Docks. It was originally constructed with no propeller, rudder or means of navigation. After its retirement, Ferro lay moored and abandoned in Bathurst Basin before then being converted to a residential houseboat by the previous occupant in the 1970's. The accommodation consisted of a living room, bathroom, utility room and bedroom in the hull, with the upper deck occupied by a kitchen and entrance space. As mentioned the applicant purchased Ferro in 2016 from the previous owner and work began to dismantle the previous accommodation in 2019, with structural works also commencing.

20/06242/H - Removal of former steel and wood construction providing additional residential accommodation above the deck level of the existing concrete barge, and replacement with better constructed and more appropriate accommodation. The application was withdrawn following advice from the Local Planning Authority that the proposed works were not considered to fall under a householder application.

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

APPLICATION

The application is for part retrospective planning consent for the alterations to the houseboat. The applicant states that the `Ferro' has no permanent fixtures to the land, however it is attached to the quayside via mooring lines and push fittings to facilitate electricity and water supplies. The applicant also states that they are currently in discussions with the Harbour Authority to establish a connection to mains sewage. The former grain barge, now houseboat has been moored in this position for a number of years and will continue to do so according to the applicant's supporting information. The applicant adds that Ferro has never had any independent means of navigation. Throughout the time as a working barge as well as that of a residential houseboat, it has always relied on another vessel (provided by the Harbour Authority) to be towed on occasions when required. The above clearly established that the `Ferro' is a permanent addition to the harbourside.

Officers have previously taken legal advice that concluded that material alterations do require planning permission given the proposed "permanence" of a boat in this location. Ultimately the applicant as owner of the `Ferro' concurs with this and has submitted this application to regularise the alterations to the boathouse comprising of a timber frame construction. Internally the boathouse comprises of three bedrooms and service room in the original hold below water level, an open plan kitchen and living room, family bathroom and lounge that occupy the upper deck and new superstructure. The boathouse would be clad in aluminium standing seam to the walls, and roof, with Thermowood timber cladding in other areas. As mentioned the applicant has to date not completed the external finish to the boathouse which also form part of the application. The external measurements of the hull are 16m x 5.8m with an internal hold area measuring 10.4m x 4.6m. There is a galvanised access ramp attached to the quayside to facilitate access. (see plans and supporting information for details).

RESPONSE TO PUBLICITY AND CONSULTATION

Neighbouring properties were consulted by individual letter. The application was also publicised by a press and site notice which expired on the 17th March 2021. 51 representations have been received in support of the application, with the following comments raised in those supporting representations.

- The works would be an improvement on the original dilapidated structure.
- It would add diversity and interest to the harbourside
- The owners should be allowed to renovate their boathouse
- It is providing accommodation to a family
- It is of a sustainable construction that should be welcome considering the City's Green Capital status

Councillor Mark Wright (Hotwells & Harbourside - who was a councillor at the time of commenting) made the following comments.

I support this application. The owners were given prior indication that a conversion would be considered positively by the Council, and the environmentally friendly works started as a result of that. When finished the boat will look much better and add to the feel of the harbour-side as a working, living waterway.

OTHER COMMENTS

City Design Group has commented as follows:-

The Ferro is located along the Floating Harbour, a prime area for leisure activity that cuts through most of the city centre neighbours and connects a series of important new and historic urban spaces. Further it falls within the City Docks Conservation Area, making this area of the floating

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

harbour a sensitive site. The key areas of concern with the application are as follows:

- The articulation of the elevations,
- The increase in height proposed,
- The complex roofscape and use of three different materials, which represents visual clutter

In summary Ferro represents a visual oddity along the harbour front unrelated to the boat vernacular expected along the waterfront. Furthermore, it would introduce an incoherent design that would also add unwelcome visual clutter along this important area of waterfront.

Environment Agency (Sustainable Places) has commented as follows:-

We have no objection to the proposal. The additional accommodation proposed may bring new users into an area of flood risk and therefore it is important the applicant revisits their flood warning and evacuation procedures. We advise local planning authorities to formally consider the emergency planning and rescue implications of new development in making their decisions.

Flood Risk Manager has commented as follows:-

In accordance with the Bristol City Council Sustainable Drainage Standing Advice Matrix, the LPA and applicant must ensure the proposal meets the requirements of the Standing Advice.

Pollution Control has commented as follows:-

No objection

Transport Development Management has commented as follows:-

Following further information on cycle storage, approve subject to conditions.

Civil Protection Manager has commented as follows:-

No objections to the improvements described in this application.

Harbour Master has commented as follows:-

The mooring where the vessel is located is situated within the City Docks Conservation Zone. I am unsure if the vessel is in keeping with what Bristol City Council would wish to see moored within this area as the construction is not of the aesthetics of a traditional vessel that is moored within the City Docks.

If the application was to be successful it must have conditions on what the overall construction looks like so it fits within the aspirations of the City with regards the surrounding area. As the construction is not built out of traditional materials the application must take into consideration the materials used and that they are akin to other constructions in both design and safety for other applications based on the land.

RELEVANT POLICIES

National Planning Policy Framework – July 2021
Bristol Local Plan comprising Core Strategy (Adopted June 2011), Site Allocation and Development Management Policies (Adopted July 2014) and (as appropriate) the Bristol Central Area Plan (Adopted March 2015) and (as appropriate) the Old Market Quarter Neighbourhood Development Plan 2015 and the Hengrove and Whitchurch Park Neighbourhood Development Plan 2019.

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

In determining this application, the Local Planning Authority has had regard to all relevant policies of the Bristol Local Plan and relevant guidance.

KEY ISSUES

(A) IS THE PRINCIPLE OF THE PROPOSAL ACCEPTABLE?

The site lies within the Harbourside Neighbourhood as defined in the Central Area Plan. Para 9.7.1 states "The area's attractive and lively nature has resulted in a growing number of residential and commercial moorings which provide further interest and activity". Policy BCAP41 sets out the Approach to Harbourside and states that "development will be expected to enhance the Harbourside's role as an informal leisure destination and a focus for maritime industries, creative industries and water-based recreation, preserving and enhancing the setting of the neighbourhood's major attractions including the Floating Harbour itself.

Whilst the policy does not specifically refer to houseboats, residential accommodation is identified as the type of development that contributes to the mix of uses in the city centre. The proposal is primarily for alterations to an existing boathouse and therefore the relevant design policies under the local plan apply (see key issue B). Nonetheless, the changes will also result in a larger residential unit adding to the mix of living accommodation in the central Bristol.

Policy BCS5 of the Bristol Development Framework Core Strategy aims to deliver new homes within the built up area to contribute towards accommodating a growing number of people and households in the city. Policy BCAP3 of the Central Area Plan states that new homes will be expected to contain a proportion of family sized homes, consisting of houses with two or more bedrooms or flats with three or more bedrooms. It is noted that these policies specifically relate to the provision of new housing rather than changes to an existing home proposed as part of this application. However the creation of additional accommodation brought about as a result of the alterations is a consideration.

The proposed alterations would result in a family sized houseboat, which is moored up in Wapping Wharf, an area comprising of a mix of uses including housing located close to a number of local amenities. In that respect it is concluded that the principle of the alterations as a means to facilitate the creation of a larger unit of residential accommodation would be acceptable. However it is the resulting design through the changes which is not considered to be acceptable for the reasons set out in the following key issue.

(B) DO THE ALTERATIONS TO THE HOUSEBOAT HARM THE CHARACTER OR APPEARANCE OF THE CITY DOCKS CONSERVATION AREA AND/OR THE SETTING OF OTHER SURROUNDING HERITAGE ASSETS?

The application site falls within the City Docks Conservation Area, and therefore the setting of a conservation area, listed assets and that of a locally-listed building are all impacts on heritage assets that must be considered.

Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 states that on considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. The Authority is also required (under Section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990) to pay special regard to the desirability of preserving or enhancing the character or appearance of the conservation area.

Section 16 of the National Planning Policy Framework (NPPF) (2021) states that when considering the impact of a proposed development on the significance of a designated heritage asset, great

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

weight should be given to the asset's conservation, with any harm or loss requiring clear and convincing justification. Paragraph 195 of the NPPF requires Local Planning Authorities to identify and assess the particular significance of any heritage asset that may be affected by a proposal and take this into account when considering the impact of a proposal on a heritage asset. Paragraph 202 of the NPPF states that any less-than-substantial harm to the significance of designated heritage assets should be weighed against the public benefits of the proposal, including securing the optimum viable use.

Local planning policy accords with this with policy BCS22 of the Core Strategy and Policy DM31 of the Site Allocations and Development Management Policies seeking to ensure that development proposals safeguard or enhance heritage assets in the city. Policy BCS2 of the Core Strategy states that within the City Centre "Design of development will be expected to be of the highest standard in terms of appearance, function, conservation of heritage assets". Policy BCAP41 of the Central Area plan states: "Development adjacent to the Floating Harbour will be expected to be of a scale and design appropriate to its setting, reflecting the special interest and visual prominence of quayside areas and character and setting of the surviving historic buildings and fabric and preserving and enhancing views to and from the Floating Harbour".

The City Docks Character Appraisal 2011 identifies unsympathetic developments that result in loss of key views or fail to respect the industrial character, scale and material palette of the area as a threat and point 7.1.6b of the appraisal sets out that the floating harbour has succeeded in "retaining a distinct dockland ambience with working boatyards, warehouses, a working steam railway, together with a fully operational dock infrastructure and many small-scale dockland features. Traditional and creative industries, water based leisure, heritage and cultural attractions all sit within an original docklands landscape."

The harbour is one of the most historically significant areas of the city with a unique sense of place. Subsequently proposals affecting the harbour need to positively respond to the area's historic character. As set out above, the NPPF requires the significance of heritage assets to be understood, including any contribution made by their setting. Paragraph 4.2 of the Character Appraisal, states that the Floating Harbour is remarkable for its intimate relationship to the city. The port was never enclosed or separate; as a result, city streets opened onto wharfs and the working of the docks was carried out next to public highways. The physical proximity of the docks to the public realm has been critical in shaping Bristol's sense of place as a great maritime city. This has occurred as a result of the urban morphology that has evolved in and around the dock which dates back to the medieval period as set out in section 5 of the Character Appraisal.

The significance of this part of the conservation area is also derived from the views to and from the site. Section 6 of the City Docks CA Character Appraisal identifies some of the most significant and panoramic views from the Conservation Area. Panoramic view 11 from Prince Street Bridge is described as having views in all directions including towards Wapping Wharf where the 'Ferro' resides, and would be particularly sensitive to change, due to the bridge's location within the Docks and the large footfall that crosses it. Panoramic view 24 in the Character Appraisal provides views from Hannover Quay across to Wapping Wharf. Long views across parts of Wapping Wharf are provided from Millennium Square (L12).

The materials palette is also important and contributes to the significance of the conservation area. The waterside areas of the Conservation Area also have an industrial character, with high quality historic materials, such as cobbled surfaces and quayside features.

The significance of the listed harbour walls is derived from their industrial character and high quality historic materials. Although not medieval fabric, the Grade II listed walls are a legible and tangible reminder of the maritime importance of Bristol throughout its history.

The alterations to the Ferro would result in a substantial structure which is overly bulky in its scale,

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

mass and form. Whilst the houseboat sits low in the water, the upper part of the living accommodation projects above the Quay walls to Wapping Wharf and is clearly visible. The combination of the design and proposed pallet of materials is considered to look functional and utilitarian in appearance. The Ferro was historically a working grain barge and an argument could be made that boats and vessels of that type are part of the character of the area. It is considered that the proposed alterations would neither reflect the character of a boat that is commercial or of leisure use in nature. Therefore it would not be in keeping with the maritime appearance of the area.

The Conservation Area Character Appraisal identifies threats to the Conservation Area. These include "unsympathetic developments that result in loss of key views of panoramas or fail to respect the industrial character, scale and material palette of the area." Due to the size and character of the `Ferro' it is considered that the development would distract from those views identified above, including views north and northwest from Hannover Quay and across from Prince Street Bridge to the east and many other viewpoints of which are located on Quayside Walkways.

Views can be impacted not only in terms of an object physically obscuring a landmark or line of sight, but also by an object appearing as an incongruous feature within a field of vision, detracting from a view. The views referred to above would take in the listed harbour walls, the setting of those assets would be harmed, since "setting" is defined in the NPPF as "the surroundings in which a heritage asset is experienced".

Overall, by virtue of its size, bulk, scale and functional appearance, it is considered that the alterations would constitute an incongruous addition within this part of the Floating Harbour. This is not considered to be in keeping with the area characterised by traditional looking boats (whether they are used for leisure or living in) against a backdrop of character buildings of merit. The houseboat alterations do not reflect the dockside character, and given the prominent position in this part of the floating harbour, visible from a number of vantage points to be to the detriment of visual amenity. Therefore this would cause harm to the designated heritage assets and fail to preserve the character of this part of the conservation area.

With reference to paragraph 202 of the NPPF, it must be considered whether the less-than substantial harm is justified and outweighed by public benefits. The provisions of policy DM31 also must be considered (bullet points i-iv of the policy under the heading "conserving heritage assets"). Supporters of the scheme have set out a number of benefits of the proposals, including the improvement to a houseboat that was in a state of poor repair, the provision of a family sized unit of accommodation, and the use of sustainable construction and components such as solar panels.

Whilst a separate matter it is understood that should the works both retrospective and proposed to the `Ferro' be refused (due to failure to obtain planning permission or be moved on by the Harbour Authority) then the applicant would need to seek alternative location for their houseboat. An alternative location which is less historically sensitive in terms of conservation may be acceptable, whilst still delivering the consent the applicant is seeking. Therefore given the above, whilst the benefits of the scheme including the public benefits are acknowledged (see key issues A and E), it is not considered that these outweigh the harm posted to heritage assets and their settings. The public benefit is not necessarily dependent on the alterations to the Ferro, which could be relocated to a less sensitive location subject to suitability and the applicant's requirements.

In conclusion, the scale, mass form, finish and overall appearance of the renovated boathouse would result in a less than significant harm to the character and appearance of this part of the City Docks Conservation Area (and identified key views); the setting of other nearby heritage assets and the City Docks Conservation Area. Whilst the proposal would have some wider public benefits, these would not outweigh the harm cause to the heritage asset, contrary to policies BCS21 and BCS22 of the Bristol Local Plan Core Strategy (2011), policies DM26, DM30 and DM31 of the Site Allocations and Development Management Policies (2014), policy BCAP41 of the Central Area

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

Plan and Section 16 of the National Planning Policy Framework (2021).

(C) DOES THE PROPOSAL SATISFY ISSUES WITH REGARD TO FLOOD RISK?

Bristol's Floating Harbour is located within Flood Zone 3, an area of high risk to flooding. Whilst the proposed alterations relate to an existing barge moored on water, it is important to ensure that in the event of a flood that the 'Ferro' would be appropriately tethered and that there would be a flood evacuation plan in place. The applicant has submitted a brief Flood Risk Assessment as part of the application. This confirmed that it is common for fluctuations and variations of water levels in the Harbour within a margin of 500mm as a result of tide, fresh water flow or deliberate lowering for engineering and regularly scouring operations. The applicant states that the only part of the development that would be affected by the change in water level is the distance between the access ramp and front door which would reflect the fluctuations of the water levels.

On reviewing the application the Environment Agency raised no objection, but noted that the alterations could increase the occupancy of the houseboat and therefore referred to the advice regarding adequate flood evacuation which the applicant should review to ensure it remains fit for purpose. The Council's Flood Team referred to the Standing Advice for developments of this type. The applicant confirmed that the existing houseboat has been set up to receive flood warning alerts by telephone call and text message via Floodline and regularly monitors both Harbour Authority websites and weather warnings. The Council's Emergency Planning Officer raised no objection to the proposals, citing that the alterations would be an improvement. With that being the case, should the development be acceptable, the applicant would be advised to update their flood evacuation procedures in light of the increase in available accommodation on the houseboat.

(D) DOES THE PROPOSAL SATISFACTORILY ADDRESS ISSUES OF MOVEMENT AND TRANSPORT?

The Ferro is situated with a sustainable location in central Bristol with ease of access to a number of facilities. It is understood that the applicant is entitled to a parking permit given the location within the Spike Island residents parking scheme. It is noted that there is existing dedicated waste storage facilities for use adjacent to the site. On considering the application the Council's Transport Development Management Team did not object on highway grounds subject to the provision of storage for up to 3 cycles in accordance with the standards for a three bed unit. The applicant has subsequently provided these details.

(E) SUSTAINABILITY

Policies BCS13, BCS14, BCS15 and BCS16 of the adopted Core Strategy give clear guidance on sustainability standards to be achieved in any development.

The Council's Practice Note on Climate Change and Sustainability (July 2020), sets out the exceptions where a planning application is not required to provide a Sustainability Statement. The application is essentially for alterations to an existing unit of living accommodation. Whilst the internal alteration has created two additional bedrooms, it still remains a single residential unit and therefore it is considered that the exceptions apply.

The application does not include a Sustainability Statement, however a brief section in the supporting Design & Access Statement under "Energy Performance" has been included. It states that the Ferro comprises of materials including timber, thermowood timber cladding, high performance treble and double glazed composite doors and windows. PV panels and solar thermal tubes are located to the roof of the houseboat. The statement includes some photographic evidence of the components that have been installed within the houseboat. These are all measures which are welcome from a sustainability perspective and should be given weight in the decision on the application.

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

(F) WOULD THE ALTERATIONS CAUSE HARM TO NEIGHBOURING AMENITY?

The overall alterations do not change the existing residential use of the 'Ferro' and therefore it does not constitute any land use issues. The changes to the fenestration still maintain views orientated on the sides of the boathouse which is typical for most of the vessels moored adjacent to this part of the floating harbour.

The resulting physical alterations are not considered to have any impacts on neighbouring properties and are therefore considered acceptable from an amenity perspective.

CONCLUSION

The scale, mass, form, finish and overall appearance of the altered houseboat would result in a visually incongruous structure, not be in keeping with the maritime appearance expected for a boat or vessel moored adjacent to the harbour. This would result in less than significant harm to the character and appearance of this part of the City Docks Conservation Area (and identified key views) and the setting of other nearby heritage assets. Whilst the alterations would result in some public benefit, this is not considered to outweigh the identified harm and therefore does not justify the mooring of a barge of this form scale, massing and design in this sensitive context.

COMMUNITY INFRASTRUCTURE LEVY

How much Community Infrastructure Levy (CIL) will this development be required to pay?

Development of less than 100 square metres of new build that does not result in the creation of a new dwelling; development of buildings that people do not normally go into, and conversions of buildings in lawful use, are exempt from CIL. This application falls into one of these categories and therefore no CIL is payable.

EQUALITIES ASSESSMENT

During the determination of this application due regard has been given to the impact of this scheme in relation to the Equalities Act 2010 in terms of its impact upon key equalities protected characteristics. These characteristics are age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation. There is no indication or evidence (including from consultation with relevant groups) that different groups have or would have different needs, experiences, issues and priorities in relation to this particular proposed development. Overall, it is considered that this application would not have any significant adverse impact upon different groups or implications for the Equality Act 2010.

RECOMMENDED REFUSE

The following reason(s) for refusal are associated with this decision:

Reason(s)

1. The resulting changes to the houseboat by virtue of its bulk, scale, mass form, finish and overall appearance, would result in an unsympathetic alteration in a prominent and sensitive location. This would cause harm to the character and appearance of this part of the City Docks Conservation Area (and identified key views), and the setting of other nearby heritage assets. The alterations are therefore contrary to Policies BCS21 and BCS22 of the Bristol Development Framework Core Strategy (June 2011), Policies DM26, DM30 and DM31 of the Site Allocations and Development Management Policies (July 2014), Policy BCAP41 of the Bristol Central Area Plan (March 2015), the City Docks Character Appraisal (December 2011), as well as guidance contained within Section 12 of the Planning (Listed Buildings and Conservation Areas) Act 1990 and the National Planning Policy Framework

Development Control Committee A – 11 August 2021
Application No. 21/00288/F : Ferro Wapping Wharf Bristol BS1 6GW

(July 2021).

Advice(s)

1. Refused Applications Deposited Plans/Documents

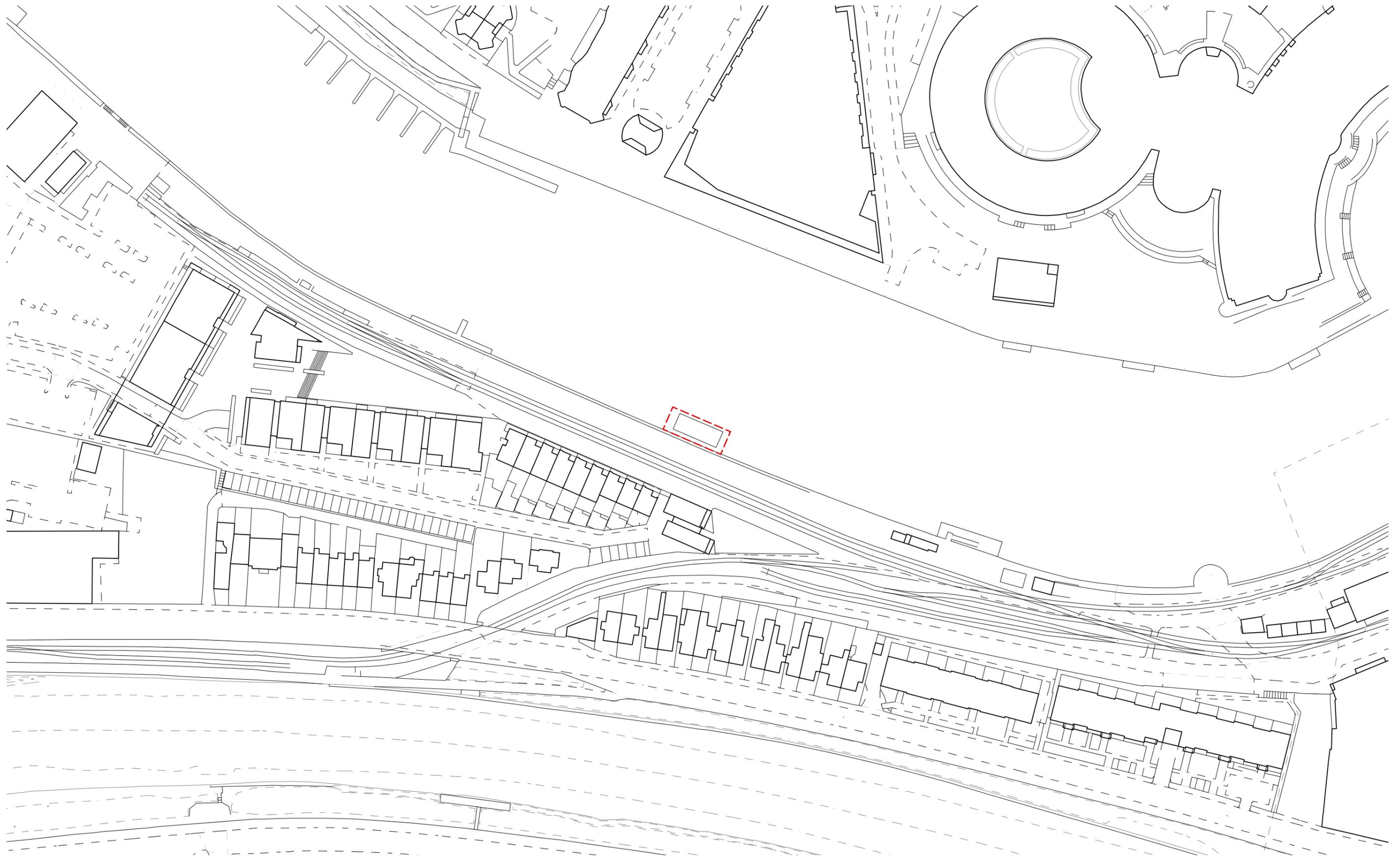
The plans that were formally considered as part of the above application are as follows:-

Location plan, received 28 January 2021
Lower floor plan, received 28 January 2021
Upper floor plan, received 28 January 2021
Roof plan, received 28 January 2021
North elevation, received 28 January 2021
East elevation, received 28 January 2021
South elevation, received 28 January 2021
West elevation, received 28 January 2021
Bike storage hooks, received 11 May 2021
Flood risk assessment, received 28 January 2021

Supporting Documents

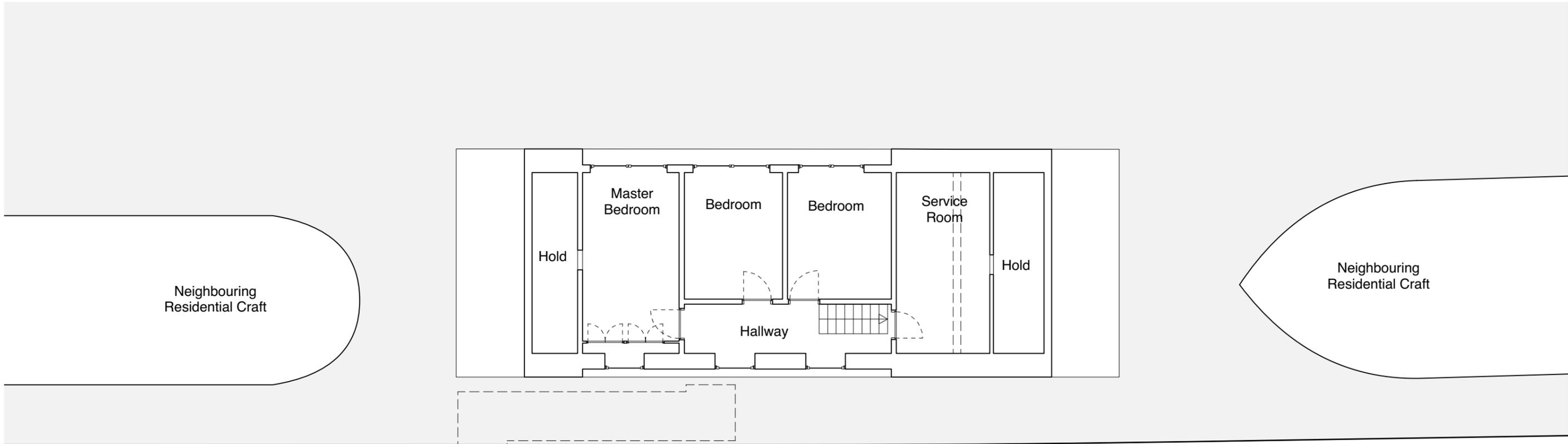
3. Ferro, Wapping Wharf, BS1 6GW.

1. Site location
2. Lower floor plan
3. Upper floor plan
4. Roof plan
5. North elevation
6. East elevation
7. South elevation
8. West elevation



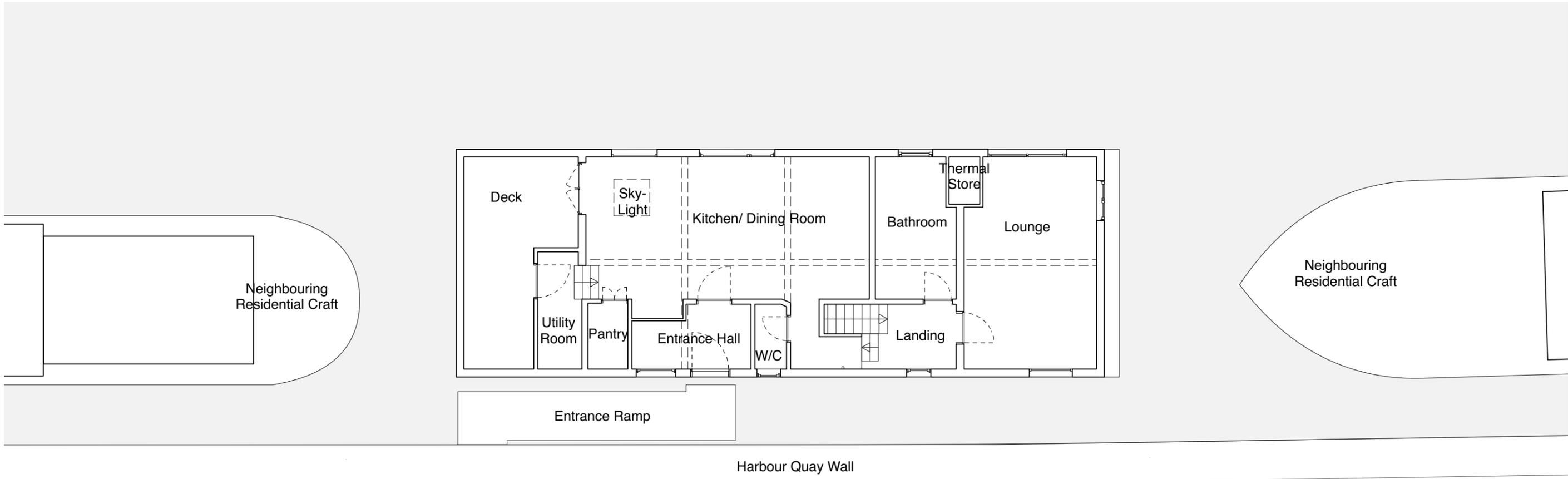
Location Plan
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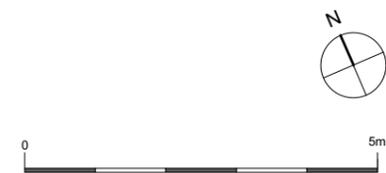


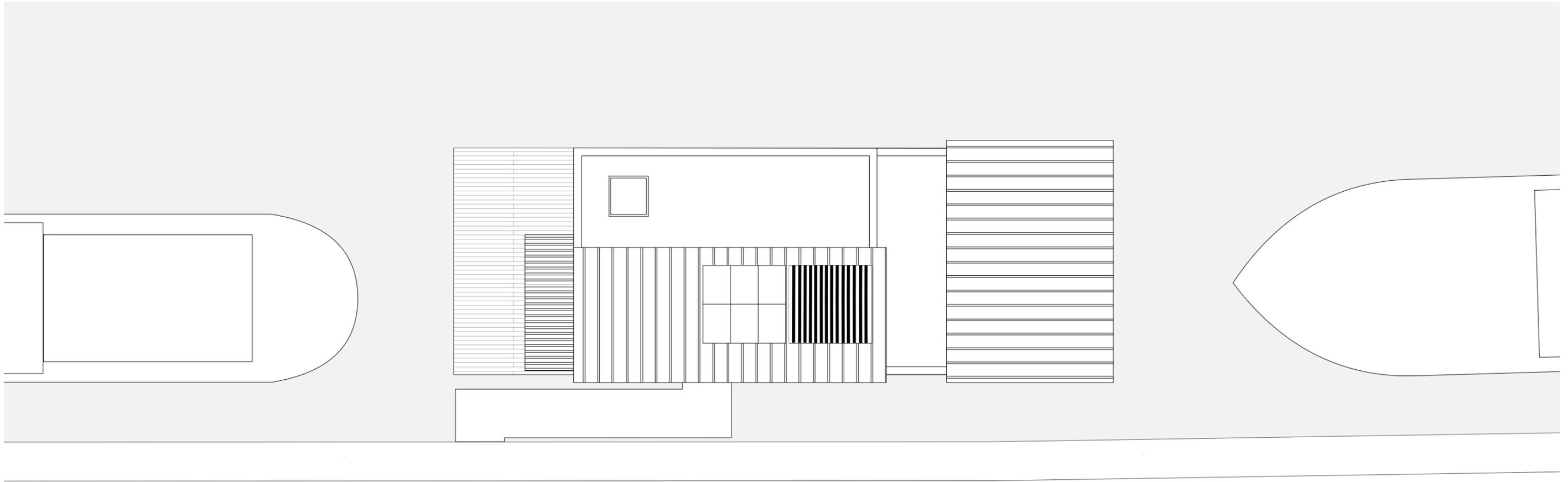
Lower Floor Plan
scale 1:100





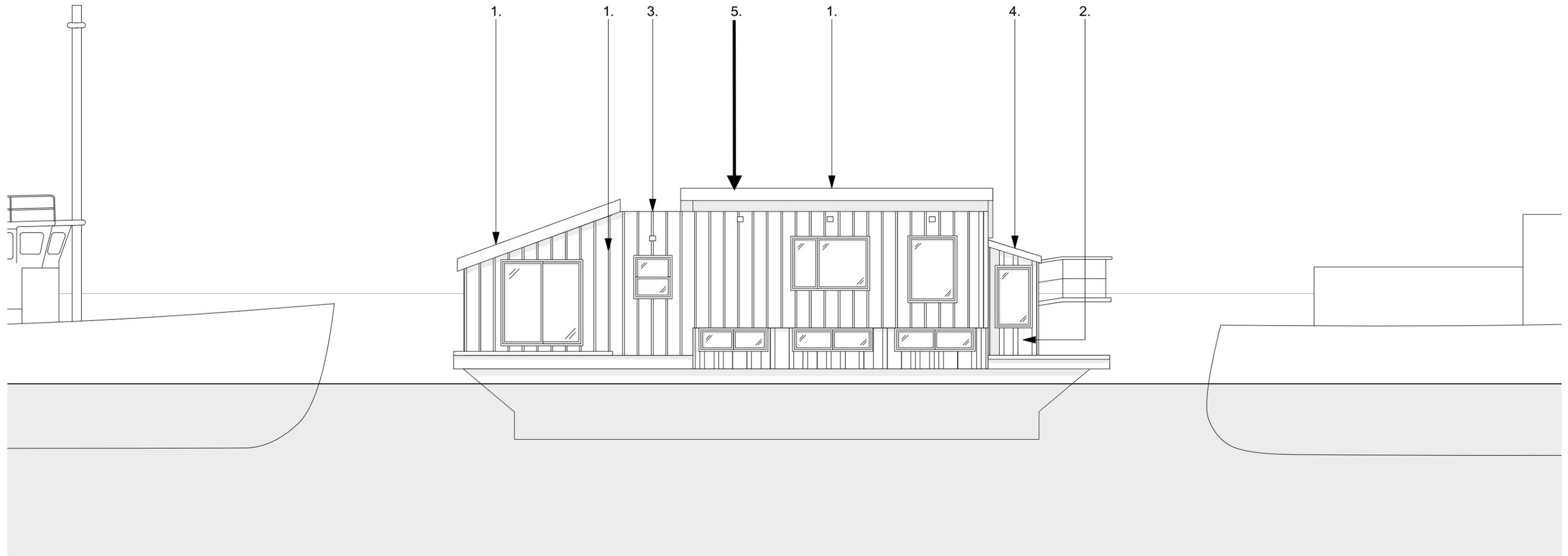
Upper Floor Plan
scale 1:100





Roof Plan
scale 1:100



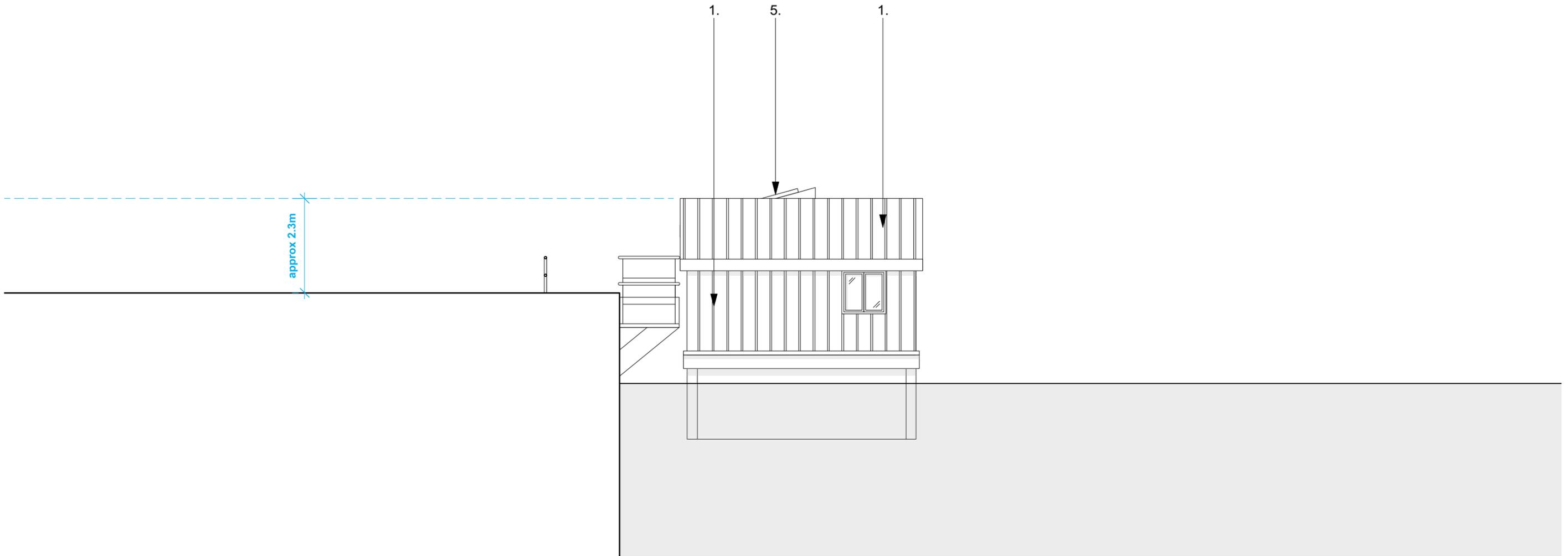


North Elevation
scale 1:100

Key

1. Aluminium Standing Seam Cladding to exterior walls and pitched roof
2. Timber cladding to exterior walls
3. Single ply membrane to flat roof
4. Polycarbonate sheet to lean to roof
5. PV panels and solar thermal tubes on pitched roof



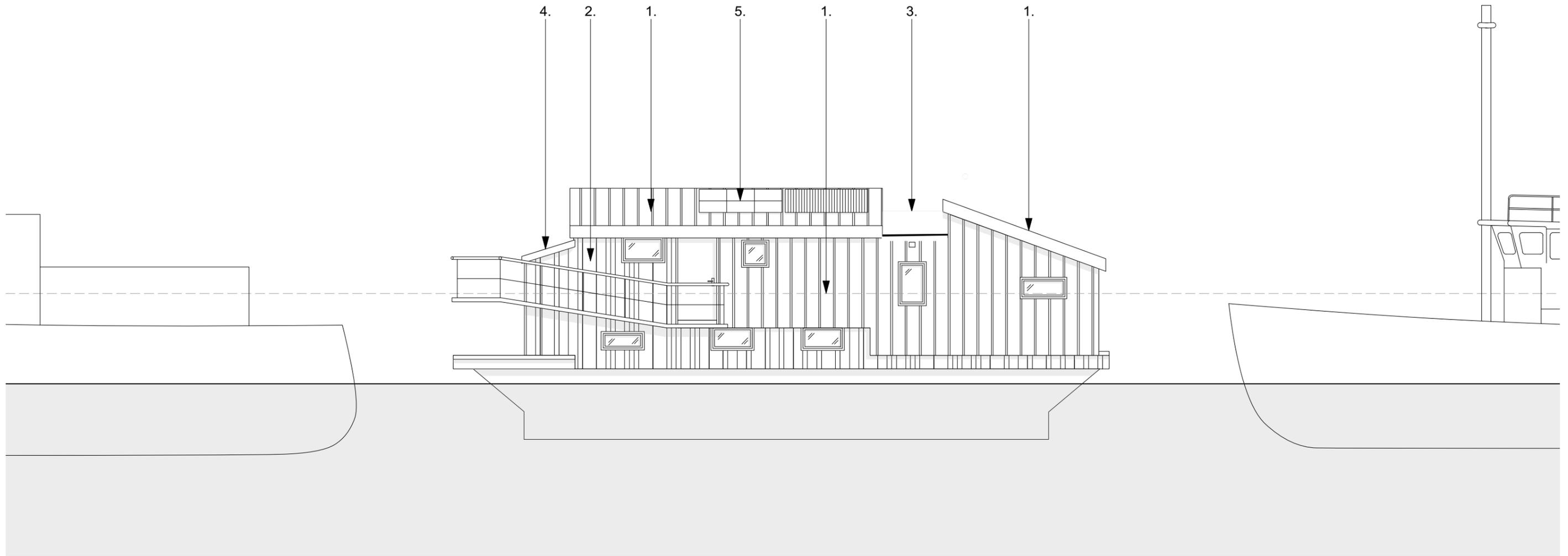


East Elevation
scale 1:100

Key

- 1. Aluminium Standing Seam Cladding to exterior walls and pitched roof
- 2. Timber cladding to exterior walls
- 3. Single ply membrane to flat roof
- 4. Polycarbonate sheet to lean to roof
- 5. PV panels and solar thermal tubes on pitched roof



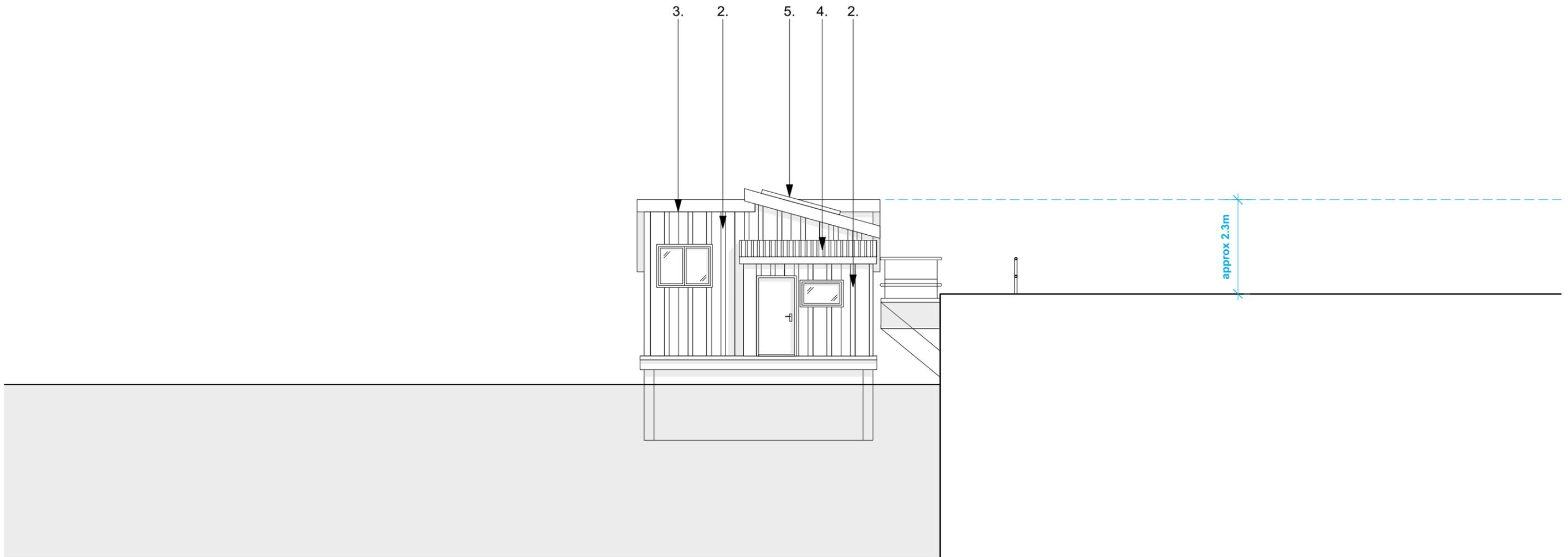


South Elevation
scale 1:100

Key

1. Aluminium Standing Seam Cladding to exterior walls and pitched roof
2. Timber cladding to exterior walls
3. Single ply membrane to flat roof
4. Polycarbonate sheet to lean to roof
5. PV panels and solar thermal tubes on pitched roof





West Elevation
scale 1:100

Key

1. Aluminium Standing Seam Cladding to exterior walls and pitched roof
2. Timber cladding to exterior walls
3. Single ply membrane to flat roof
4. Polycarbonate sheet to lean to roof
5. PV panels and solar thermal tubes on pitched roof

