

**LRB-2023-02**  
**22/01282/FLL – Erection of a cinema and community radio hub and associated works, 47-49 East High Street, Crieff, PH7 3HY**

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**LRB-2023-02**

**22/01282/FLL – Erection of a cinema and community radio hub and associated works, 47-49 East High Street, Crieff, PH7 3HY**

**PAPERS SUBMITTED  
BY THE  
APPLICANT**





# NOTICE OF REVIEW

UNDER SECTION 43A(8) OF THE TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 (AS AMENDED) IN  
RESPECT OF DECISIONS ON LOCAL DEVELOPMENTS

THE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND LOCAL REVIEW PROCEDURE)  
(SCOTLAND) REGULATIONS 2013

THE TOWN AND COUNTRY PLANNING (APPEALS) (SCOTLAND) REGULATIONS 2008

**IMPORTANT: Please read and follow the guidance notes provided when completing this form.**  
**Failure to supply all the relevant information could invalidate your notice of review.**

Use **BLOCK CAPITALS** if completing in manuscript

## Applicant(s)

Name

Address

Postcode

Contact Telephone 1

Contact Telephone 2

Fax No

E-mail\*

## Agent (if any)

Name

Address

Postcode

Contact Telephone 1

Contact Telephone 2

Fax No

E-mail\*

Mark this box to confirm all contact should be  
through this representative: ☒

\* Do you agree to correspondence regarding your review being sent by e-mail?

Yes ☒ No ☐

Planning authority

Planning authority's application reference number

Site address

Description of proposed development

Date of application  Date of decision (if any)

**Note.** This notice must be served on the planning authority within three months of the date of the decision notice or from the date of expiry of the period allowed for determining the application.

**Nature of application**

- |  |                                     |
|--|-------------------------------------|
| 1. Application for planning permission (including householder application)   | <input checked="" type="checkbox"/> |
| 2. Application for planning permission in principle  | <input type="checkbox"/>            |
| 3. Further application (including development that has not yet commenced and where a time limit has been imposed; renewal of planning permission; and/or modification, variation or removal of a planning condition) | <input type="checkbox"/>            |
| 4. Application for approval of matters specified in conditions   | <input type="checkbox"/>            |

**Reasons for seeking review**

- |   |                                     |
|---|-------------------------------------|
| 1. Refusal of application by appointed officer  | <input checked="" type="checkbox"/> |
| 2. Failure by appointed officer to determine the application within the period allowed for determination of the application | <input type="checkbox"/>            |
| 3. Conditions imposed on consent by appointed officer   | <input type="checkbox"/>            |

**Review procedure**

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may tick more than one box if you wish the review to be conducted by a combination of procedures.

- |   |                                     |
|---|-------------------------------------|
| 1. Further written submissions                                    | <input type="checkbox"/>            |
| 2. One or more hearing sessions                                   | <input type="checkbox"/>            |
| 3. Site inspection  | <input type="checkbox"/>            |
| 4. Assessment of review documents only, with no further procedure | <input checked="" type="checkbox"/> |

If you have marked box 1 or 2, please explain here which of the matters (as set out in your statement below) you believe ought to be subject of that procedure, and why you consider further submissions or a hearing are necessary:

**Site inspection**

In the event that the Local Review Body decides to inspect the review site, in your opinion:

- |  | Yes                                 | No                       |
|--|-------------------------------------|--------------------------|
| 1. Can the site be viewed entirely from public land?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is it possible for the site to be accessed safely, and without barriers to entry? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If there are reasons why you think the Local Review Body would be unable to undertake an unaccompanied site inspection, please explain here:

**Statement**

You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. Note: you may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

If the Local Review Body issues a notice requesting further information from any other person or body, you will have a period of 14 days in which to comment on any additional matter which has been raised by that person or body.

State here the reasons for your notice of review and all matters you wish to raise. If necessary, this can be continued or provided in full in a separate document. You may also submit additional documentation with this form.

Refer to Statement and Supporting Documents

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made?

Yes ☐ No ☒

If yes, you should explain in the box below, why you are raising new material, why it was not raised with the appointed officer before your application was determined and why you consider it should now be considered in your review.

**List of documents and evidence**

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review.

Notice of Review - Supporting Statement

Appendix 1

Appendix 2

Appendix 3

Appendix 4

Appendix 5

Appendix 6

Appendix 7

Appendix 8

Appendix 9

Note. The planning authority will make a copy of the notice of review, the review documents and any notice of the procedure of the review available for inspection at an office of the planning authority until such time as the review is determined. It may also be available on the planning authority website.

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**Checklist**

Please mark the appropriate boxes to confirm you have provided all supporting documents and evidence relevant to your review:

- ☒ Full completion of all parts of this form
- ☒ Statement of your reasons for requiring a review
- ☒ All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review.

Note. Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice from that earlier consent.

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**Declaration**

**I the applicant/agent [delete as appropriate] hereby serve notice on the planning authority to review the application as set out on this form and in the supporting documents.**

Signed



Date

16/01/2023

## Notice of Review

### LEADENFLOWER CINEMA AND COMMUNITY RADIO HUB

#### Statement and Supporting Documents

**21/01850/CON** – Demolition of Former Hotel, 47 – 49 East High Street, Crieff, PH7 3HY

**22/01282/FLL** – Erection of Cinema and Community Radio Hub and Associated Works, 47 – 49 East High Street, Crieff, PH7 3HY (see appendix 9)

#### Introduction

1. This statement has been prepared by Fergus Purdie Architect on behalf of Creative Crieff (the appellant) and supports an Application for a Local Review against refusal by Perth and Kinross Council (PKC) of planning applications 21/01850/CON Demolition of former hotel and 22/01282/FLL Erection of cinema and community radio hub and associated works.

2. Both applications were determined by officers under delegated powers and planning permission was refused on 8th December 2022. This statement provides a response to the key reasons for the refusal of these applications.

3. Section 25 of The Town and Country Planning (Scotland) Act 1997 as amended by the Planning etc. (Scotland) Act 2006 affords the following status to development plans:

“Where, in making any determination under the planning Acts, regard is to be had to the development plan, the determination shall be made in accordance with the plan unless material considerations indicate otherwise.”

4. For the reasons set out in this statement it is considered that the proposals accord with the Development Plan and are supported by other material considerations. It is therefore respectfully requested that this Application for a Local Review is supported by the Local Review Body and Planning Permission granted.

**21/01850/CON**

5. The former Crieff Hotel is located within the Crieff Conservation Area. The building sought for demolition are not subject to any statutory listing.

6. Application 21/01850/CON was refused planning approval for the following reason:

“There is no approved scheme for the redevelopment of the site, and it cannot therefore be ascertained whether the proposed development preserves or enhances the conservation area. The principle of demolition cannot be considered in isolation. The proposal is therefore contrary to Policy 28B of the Perth and Kinross Local Development Plan 2 (2019) and the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

7. The proposal is considered contrary to Policy 28B: Demolition within Conservation Areas. This policy states:

“When assessing applications for the demolition of unlisted buildings in Conservation Areas, the Council will give careful consideration to the merits of the building and its contribution to the character and appearance of the Conservation Area. Where a building is considered to be of value, either in itself or as part of a group, there will be a presumption in favour of its retention, restoration for the current or another appropriate use.”

In those exceptional circumstances where demolition is considered acceptable and is to be followed by the redevelopment of the site, the application for proposed demolition should be accompanied by a detailed application for the replacement development. This is to allow for their consideration in parallel, and to ensure that the replacement scheme will enhance or preserve the character of the area and avoid the formation of gap sites.”

8. In assessing whether this proposal conforms to Policy 28B the key considerations are twofold. Firstly, whether the demolition of the former hotel is deemed acceptable, and secondly, whether a suitable scheme for the redevelopment of the site is in place.

9. Taking these in turn, it is recognised that the retention and reuse of existing buildings is generally preferable. However, it is accepted that this is not always possible. The appellant has explored a range of options for retaining the building, nevertheless these have been found to be unviable. Historic Environment Scotland (HES) confirmed on 28 September 2022 (see appendix 1) that it is accepted that the retention of the building is unviable and have withdrawn any objection to its demolition.

10. The delegated officer report confirms that the information submitted by the appellant is adequate to support the case that retention of the building is unviable. On this basis it is contended that the demolition of the former hotel is acceptable in principle by PKC.

11. In order to fully meet the requirements of Policy 28B an approved scheme for the redevelopment of the site must be in place. As planning application 22/01282/FLL was refused the replacement development was not in place and therefore it was necessary for PKC to refuse this demolition consent.

12. If the Local Review Body approve the replacement development under 22/01282/FLL, then it is respectfully suggested that there are no substantial reasons not to also approve the demolition of the former hotel as submitted under planning application 21/01850/CON.

#### **22/01282/FLL**

13. Application 22/01282/FLL was refused for the following reasons:

“The proposed works would have an adverse impact on the character and visual amenity of the site. The proposal is therefore contrary to Policy 28A of the Perth and Kinross Local Development Plan 2 (2019) which sets out that development in a conservation area must preserve or enhance its appearance; and Policy 1A of the Perth and Kinross Local Development Plan 2 (2019) which seeks to ensure that all new development respects the character and amenity of the area concerned.”

14. The proposal is considered contrary to Policy 28A: New Development. This policy states:

“Development within a Conservation Area must preserve or enhance its character or appearance. The design, materials, scale and siting of new development within a conservation area, and development out-with an area that will impact upon its special qualities should be appropriate and sympathetic to its appearance, character and setting.

Where a Conservation Area Appraisal has been undertaken for the area, the details contained in that appraisal should be used to guide the form and design of new development proposals. Applications for Planning Permission in Principle in Conservation Areas will not be considered acceptable without detailed plans, including elevations, which show the development in its setting.”

15. The proposal is also considered contrary to Policy 1A: Placemaking. This policy states:

“Development must contribute positively to the quality of the surrounding built and natural environment. All development should be planned and designed with reference to climate change, mitigation and adaptation. The design, density and siting of development should respect the character and amenity of the place, and should create and improve links within and, where practical, beyond the site. Proposals should also incorporate new landscape and planting works appropriate to the local context and the scale and nature of the development.”

16. The officer report highlights the following matters in support of the refusal of the planning application:

- The design of the proposed building would not make a positive contribution to the streetscape and would not enhance or preserve the Crieff Conservation Area.
- No external finish detail has been submitted and a building finish in white render poses a future maintenance issue.
- No plan has been presented for the salvage and re-use of materials from the demolition of the existing building.

### **Building Design and Conservation Area**

17. The Crieff Conservation Area Appraisal, February 2009, contains a townscape appraisal for East High Street. This appraisal (see appendix 2) confirms that there are no listed buildings, landmark buildings, or specific qualities identified adjacent to the site. Key views are highlighted along East High Street and down Leadenflower Street. These views have been fully considered through the development of this proposal and are explored below.

18. The officer report highlights that the open courtyard, wild garden, and other biodiversity enhancement measures are positive. It also notes that a contemporary design response is appropriate for an entirely new building, and that there is scope for a prominent intervention here due to the large corner site.

19. The design approach (see appendix 3) adopted in response to the visual amenity and characteristics of the surrounding area was incorporated within the following strategies -

Historical Development (see appendix 4) – the proposal re-introduces three key elements of the site's location and heritage with a re-interpretation of

- combination of garden and landscaped spaces
- public route through the site
- corner site with clearly defined edge conditions

Streetscape (see appendix 5) – the proposal acknowledges the surrounding physical context, conditions, and constraints

- roof profiles and heights are compatible with adjacent buildings
- existing narrow pavements have been widened to improve public access and safety
- provide a public space set back from the East High Street, a designated trunk road

Sustainability (see appendix 6) – the proposal incorporates a range of low carbon technologies and environmental initiatives

- roof form accommodates solar PV provision
- extensive green roofs for biodiversity
- re-use and repurpose of recycled building materials from the demolition

Principal: Fergus Purdie Chartered Architect RSA, BSc, BArch (Hons), RIAS, RIBA



19. continued - Public Realm (see appendix 7) – the project's combined uses of two cinemas, bistro/café bookshop and Radio Earn will potentially generate visitors and audience numbers of more than 280+ people. The introduction of a courtyard space set back from the East High Street will not only accommodate the movement of people throughout the day and evening, it will also provide a public space fully accessible and available to enjoy out with the noise and air quality conditions generated by the Trunk Road traffic of the East High Street.

The outcome of this integrated design approach is a planning and architecture proposal informed by and responsive to the conservation area context. And proposed new uses that will enhance the surrounding area and regeneration of the East High Street.

20. For the above reasons, the appellant considers that the proposed cinema and community radio hub will contribute positively to the quality of the surrounding built and natural environment and that the design, scale, and siting of development will respect the character and amenity of the place in accordance with Policy 1A: Placemaking.

21. Having regard to the design of the proposal, as referred to above and to the Townscape Appraisal undertaken by PKC the proposal will preserve and enhance the character and appearance of the Conservation Area and as a result the proposal accords with Policy 28A: New Development.

22. The planning application provides an example of the materials which could be used to finish the building (see appendix 8). The appellant accepts that further agreement would be required with PKC on the exact specification of any materials used through the development. Concerns regarding possible future staining to the render finish can be addressed through the detailed materials specification.

23. These matters can be required to be agreed prior to the implementation of any planning permission through a suitable planning condition.

24. The appellant intends that where possible the existing materials on the site will be utilised during the construction of the new building. The hotel building was constructed at the turn of the 20th century with the building to the rear substantially altered at a later date. At this stage, the quality and quantity of any materials which can be salvaged and reused is unknown.

25. It is suggested that a suitable planning condition may be attached to any planning permission requiring the salvage and re-use of existing materials on site where possible.

**Material Considerations**

26. The existing Crieff hotel has been vacant since 2017 and is in a poor state of repair. The proposals will create a new destination within Crieff while also bringing significant community benefit. The development will provide local jobs both during the construction and operation. The new cinema will be a key destination, drawing visitors to Crieff and helping support the existing businesses along East High Street and across the settlement as a whole.

27. Radio Earn is the successful local radio station for Strathearn and Strathallan broadcasting 24hrs a day from studios on Crieff high street. The proposals will include a new home for this station, allowing it to further expand its broadcast network across a wider area.

28. The officer report highlights that the proposal is appropriate within the context of Policy 10: City, Town and Neighbourhood Centres which supports leisure, recreation and community facilities that contribute to the character and viability of the area.

29. The proposal has received no objections from statutory consultees:

- Transport Planning – No objection received. The appellant supports the proposed planning conditions.
- Environmental Health – No objection received. The appellant supports the proposed planning conditions.
- Perth and Kinross Heritage Trust – No objection received. The appellant does not consider that the proposed conditions are necessary, but if deemed required would accept them being applied to any planning permission.

**Conclusion**

30. The appellant disagrees with the Planning Officer's assessment of these proposals and for the reasons stated considers that application 21/01850/COM complies with Policy 28B: Demolition within Conservation Areas. It is also considered that 22/01282/FLL complies with Policy 1A: Placemaking and 28A: New Development. There are material considerations in support of the proposals.

31. In conclusion, the appellant considers the proposals accord with the Development Plan and is supported by other material considerations. Having regard to S25 of the Town and Country Planning (Scotland) Act 1997, as amended, we respectfully request that this Application for a Local Review is supported, and Planning Permission granted.

**Fergus Purdie Architects (January 2023)**

Principal: Fergus Purdie Chartered Architect RSA, BSc, BArch (Hons), RIAS, RIBA



By email to:  
[Developmentmanagement@pkc.gov.uk](mailto:Developmentmanagement@pkc.gov.uk)

Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
Perth  
PH1 5GD

Our case ID: 300054952  
Your ref: 21/01850/CON  
28 September 2022

Dear Perth and Kinross Council

Planning (Listed Building Consent and Conservation Area Consent Procedure)  
(Scotland) Regulations 2015  
47 - 49 East High Street Crieff PH7 3HY - Demolition of former hotel

Thank you for your consultation which we received on 28 September 2022. The proposals affect the following:

Ref	Name	Designation Type
100018409	Crieff	Conservation Areas

### Our Advice

In our consultation responses of 16 December 2021 and 23 March 2022 we objected to this proposal on the grounds that the submitted information did not adequately demonstrate that the buildings could not be retained fully or partially. It was not clear to us that repair and reuse were economically unviable and that a range of options for reuse had been adequately explored.

In response to our letters and advice from your Council, the applicant has now submitted further information on options for retention and additional information on previous marketing of the property. On balance, we now accept that options for retaining the building have been adequately explored and found unviable. **We therefore no longer object to this proposal.**

The submitted marketing information is helpful and outlines the marketing history of the property before Creative Crieff purchased the site. While some information is not included, for example at what price the property was advertised, it is apparent that there



have been unsuccessful efforts to sell the property over a number of years for a variety of uses.

The updated options show a wider variety of uses for the site than was previously the case, although we would also have welcomed the inclusion of façade retention as an option as it was mentioned in our responses. Nevertheless, we accept the applicant's overall arguments relating to viability in the updated options appraisal and accompanying valuation report. This information sets out the market conditions in Crieff and explores the potential for a variety of uses including community, retail, office and residential. The valuation report clearly demonstrates a deficit when weighing the development cost against the valuation cost, specifically where options are proposed to retain the historic buildings. We understand that retaining the buildings would likely raise prohibitive fundraising challenges for Creative Crieff in relation to their desired scheme.

For the avoidance of doubt, we remain of the view that the demolition of 42 – 47 East High Street would represent a substantial loss to the character and appearance of the conservation area. However, on balance we accept that positive attempts have been made to achieve its reuse and this has been found to be unviable for the current owner and through marketing by previous owners.

If your Council is minded to approve the proposals, we would suggest that, where possible, materials such as stone and slate are salvaged and reused elsewhere, for example in proposed new buildings and/or as boundary treatments.

Planning authorities are expected to treat our comments as a material consideration, and this advice should be taken into account in your decision making. Our view is that the proposals do not raise historic environment issues of national significance and therefore we do not object. However, our decision not to object should not be taken as our support for the proposals. This application should be determined in accordance with national and local policy on conservation area consent, together with related policy guidance.

### Further Information

This response applies to the application currently proposed. An amended scheme may require another consultation with us.

Guidance about national policy can be found in our 'Managing Change in the Historic Environment' series available online at [www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/](http://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/). Technical advice is available through our Technical Conservation website at [www.engineshed.org](http://www.engineshed.org).





As this application involves the demolition of an unlisted building in a conservation area, if consent is granted there is a separate requirement through section 7 of the Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997 (as amended) to allow us the opportunity to carry out recording of the building. To avoid any unnecessary delay in the case of consent being granted, applicants are strongly encouraged to complete and return the Consent Application Referral Form found at [www.historicenvironment.scot/about-us/what-we-do/survey-and-recording/threatened-buildings-survey-programme](http://www.historicenvironment.scot/about-us/what-we-do/survey-and-recording/threatened-buildings-survey-programme).

Please contact us if you have any questions about this response. The officer managing this case is Devon DeCelles who can be contacted by phone on 0131 668 8075 or by email on [Devon.DeCelles@hes.scot](mailto:Devon.DeCelles@hes.scot).

Yours faithfully

**Historic Environment Scotland**

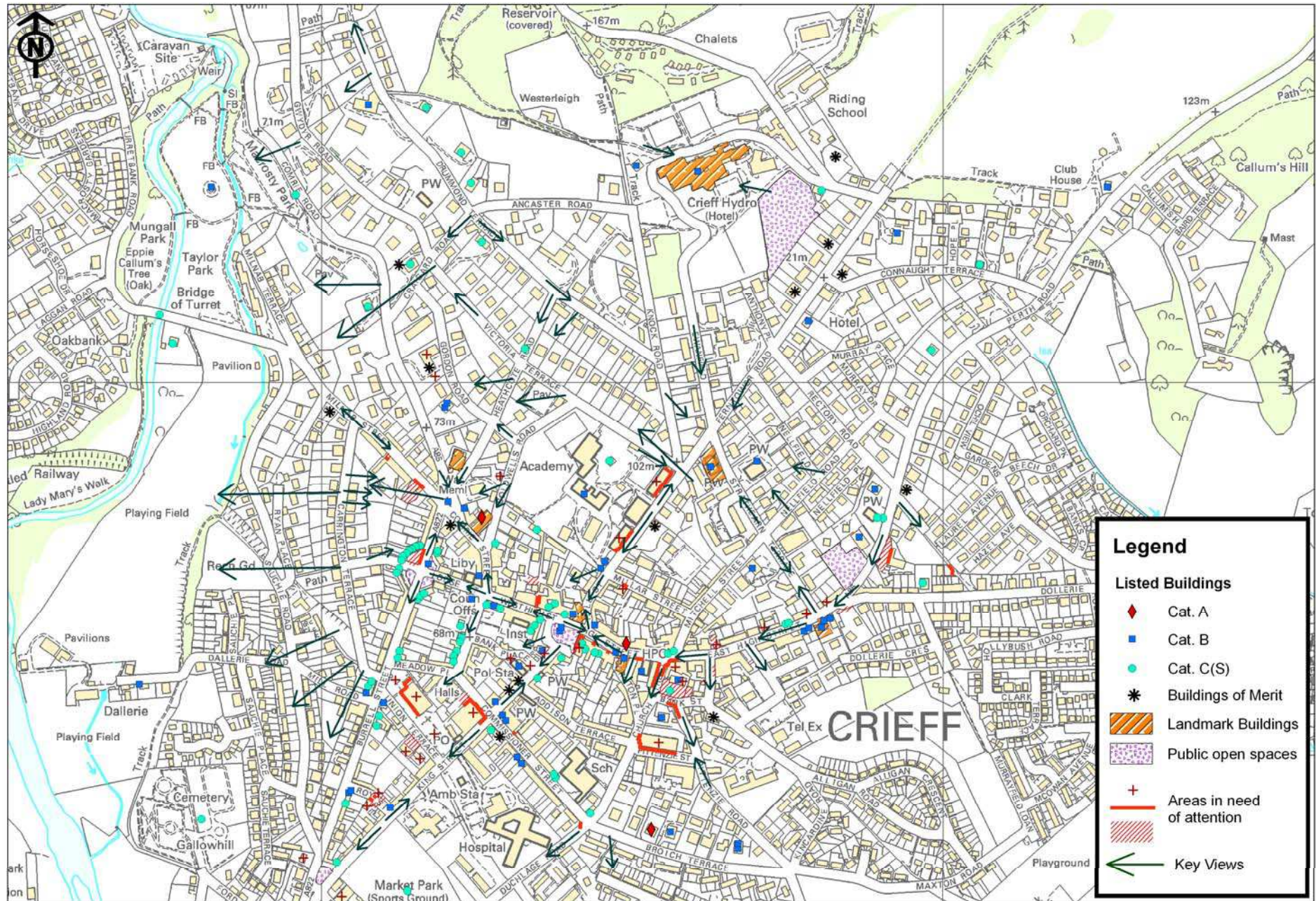
# Crieff Conservation Area Appraisal



February 2009



Map 6: Townscape Analysis





DESIGN APPROACH AND PRINCIPLES

The Brief - the core objectives of the business case and strategic brief will deliver a broad range of economic, social and regenerative outcomes. This has translated into a programme of requirements including the following key areas, all fully aligned to the business case – 2no cinema’s, bistro and bookshop, internal gathering areas, community radio facilities for Radio Earn and a range of public realm spaces.

This is very much a live project as Radio Earn established temporary occupation of a nearby High Street premises. This local radio service has achieved great success since its launch in June 2021 with continued community support and engagement from Crieff and Strathearn, Perth and Kinross Council and others. The intention is for Creative Crieff and Radio Earn to continue this success within the new proposals as a purpose built, state of the art community radio hub. Thereby continuing a community activity complimentary to the cinema provision and other fully accessible public spaces for use by locals and visitors alike.

Townscape – the property is unlisted and unreferenced in the Conservation Area Appraisal. A section of the East High Street elevation whilst offering some limited heritage value would be impracticable and unviable to restore, reuse or repurpose. As the building ‘turns the corner’ to Leadenflower Street and beyond the remaining elevations presents a series of altered and extended forms, incongruent and of poor quality. Buildings that compromise the character of the conservation area. The surrounding external car parking and residual hard standing or gravelled terraces provide no opportunity for encouraging streetscape activities or complimentary landscaping, resulting in poor quality public realm spaces that have a negative impact on the visual quality of the area.

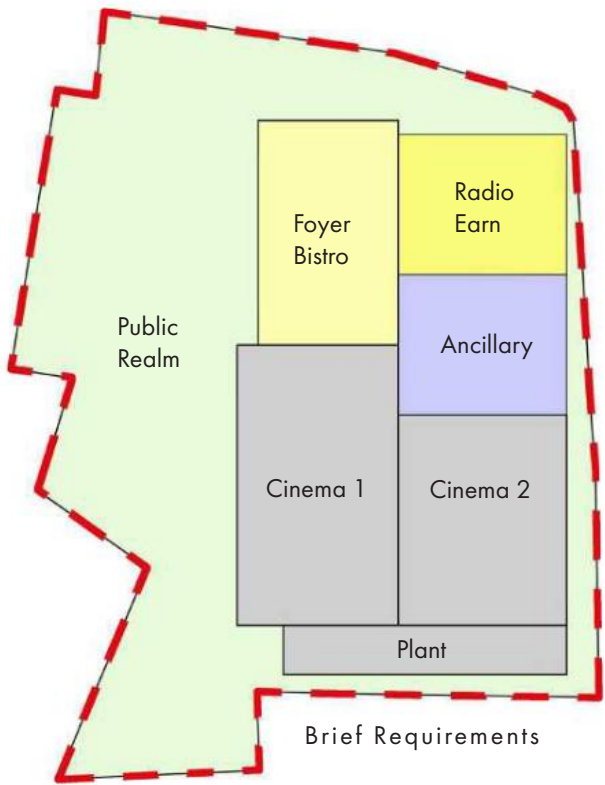
Development Compatibility of Existing Property - the former Crieff Hotel consists of a range of domestic size cellular accommodation with public rooms developed over decades of change with ad hoc interventions and alterations. The resulting configuration is incompatible with the development capacity required for the new proposals: the overall form, scale and layout of the existing property cannot provide the spatial or services requirements for the proposed new long-term use as a cinema project. In addition, the building structure and fabric conditions will not achieve the technical outcomes or performance criteria necessary for a state-of-the-art facility.



East High Street



East High Street





DESIGN APPROACH AND PRINCIPLES

Concept Design - the replacement building will provide a new purpose-built facility with adjacent external public spaces. Landscaping combining terraces and garden will provide a mix of open and sheltered external spaces fully accessible all year round. The project will re- introduce a cultural activity, Crieff previously have a cinema, that will not only serve the local area of Strathearn but also bring a much need economic development to the High Street for visitors and tourists.

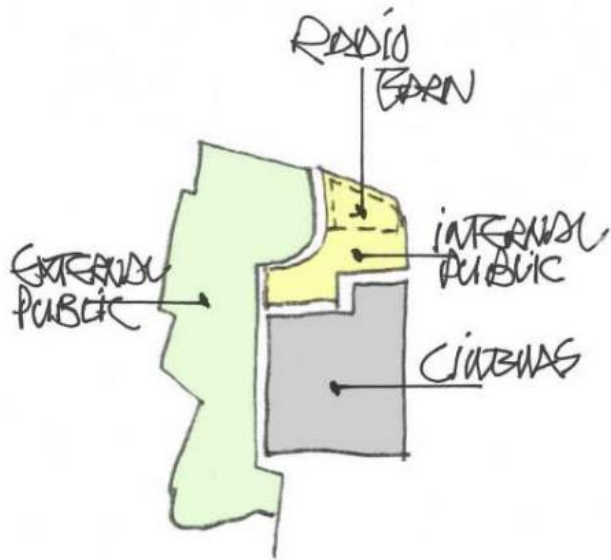
The proposed plan layout and relationship of the various uses and range of spatial requirement have been configured in response to existing site conditions and constraints, for example use of the existing topography (significant slope and level changes) to achieve a 'good fit'. To achieve this aim the cinemas are located at the lower section of the site where larger volumetric spaces can be accommodated.

- The concept design has four distinctive elements –
- external public spaces in the form of a courtyard and wild garden
  - internal public spaces for eating, drinking and gathering
  - cinemas (dark rooms) and performance spaces
  - community radio hub

The design strategy adopted for the project combines all the above elements by placing them within the site, and in relationship to each other to achieve desired spatial outcomes whilst reconciling respective functional aims and objectives. – form, scale, materials, uses, sustainability and ecology.

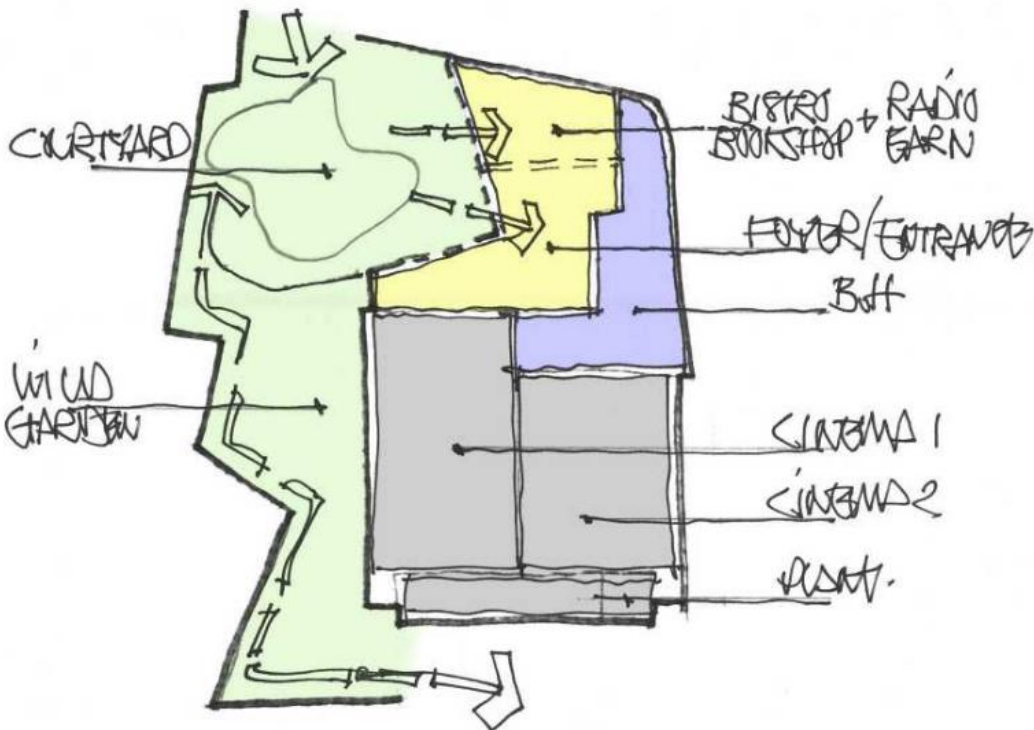
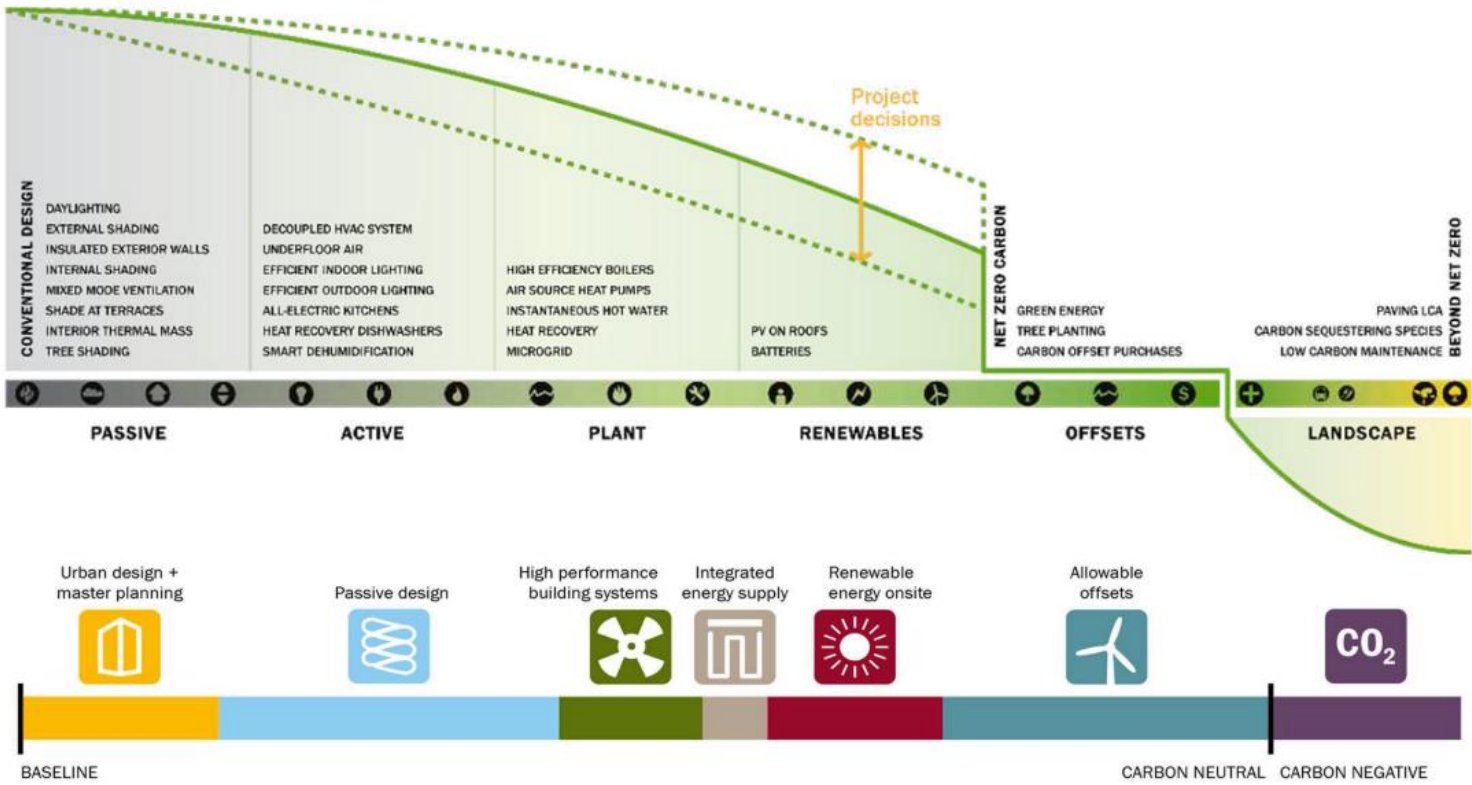
The outcome is a concept design combining a collection of clearly defined spaces that range in character and atmosphere.

- open - closed
- light - dark
- large - small
- inside - outside
- nature - crafted



Concept - Principle Elements

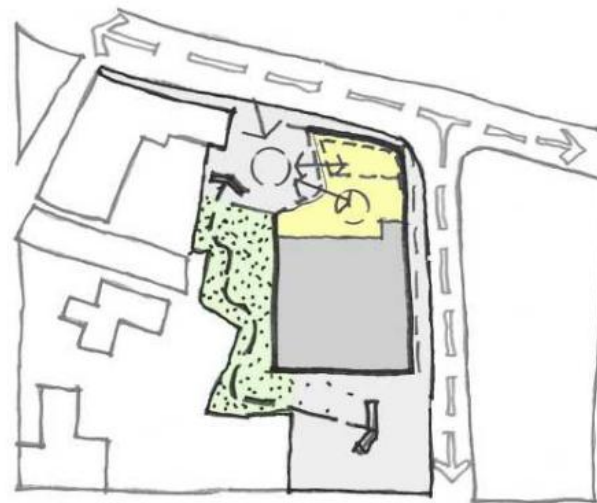
Low Carbon Journey



Concept - Schematic Plan

## DESIGN APPROACH AND PRINCIPLES

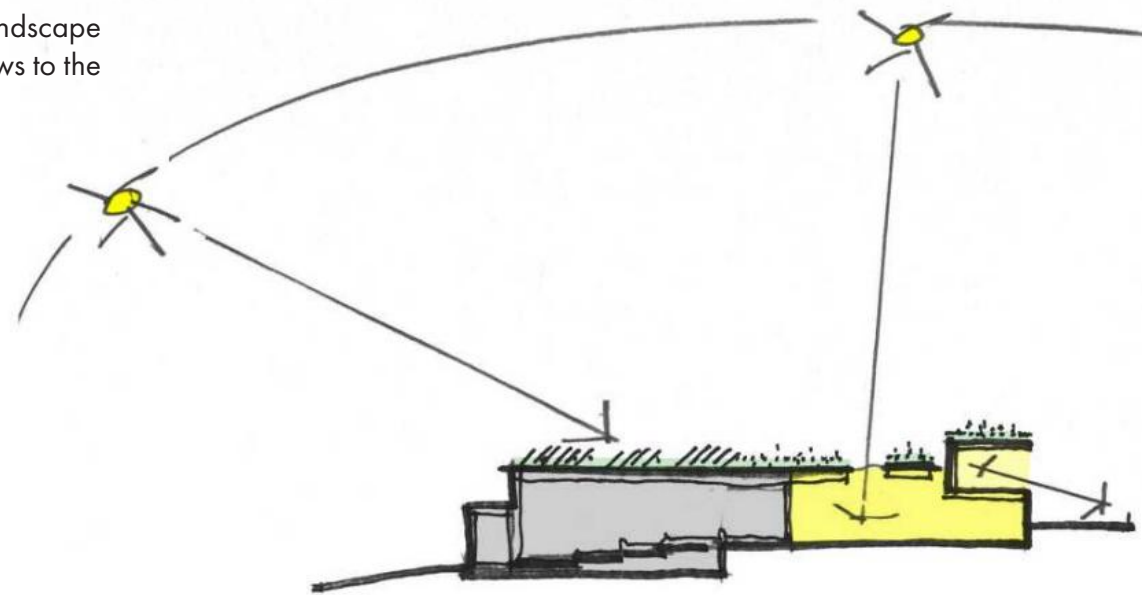
- The building presents itself in the round as a contextual response to the surrounding buildings and spaces defined by the East High Street, Leadenflower Street, Car Park and back land area. This is achieved by acknowledging the existing townscape of varied building types, styles and conditions by introducing a contemporary architecture that presents a contrasting intervention representative of its purpose and time. Thereby improving and enhancing the area in which it is situated.
- The overall architectural form and scale has been developed to clearly express each key element of the programme – public realm, open interior, closed interior and corner condition. This design approach will be developed further with material selection and detailing to articulate the form and its constituent parts within a unified composition.
- The larger and more introverted cinema spaces have been located within the lower sections of the site to minimise their visual impact by taking advantage of the significant level changes. Whilst the entrance foyer and public spaces have been located 'front of house' on the East High Street to present a clearly defined street presence and outdoor civic space.
- The building frontage provides a clearly defined building line with the street and pavement. This relationship changes as the pavement widens towards the courtyard area on the East High Street elevation, and into the courtyard space. To further emphasise the townscape importance of this location the Radio Earn facilities have been placed at first floor level, in full view, thereby clearly acknowledging the corner condition within the townscape context between East High Street and Leadenflower Street.
- The courtyard space provides improved public access and safety, potential for outdoor events and a gathering area. As a fully accessible outdoor public space it has good connectivity to the interior spaces and wild garden. It will enable the interior space and uses to 'spill out' and extend the social aspects of the programme within a clearly defined semi enclosed landscape terrace. The elevated positing of the terrace will overlook the wild garden and provide views to the surrounding countryside beyond.



Concept - Site Schematic

- The wild garden provides a natural habitat for encouraging and supporting biodiversity, locating SUDS, providing a direct public route from Leadenflower car park and surrounding neighbourhood. The open space also provides a distinctively 'green space' separation between the new building and neighbouring properties.
- Internal public spaces can be accessed directly off the courtyard and interconnect with each other. These 'front of house' spaces has large areas of glazing to achieve a strong visual 'on street' and courtyard presence of the spaces and provide significant daylight.
- Low - zero carbon generating technologies will be an integrated part of the design's strategic definition. This will include a fabric first approach of high performance u-values combined with the use of natural daylight/ventilation, thermal mass, solar PV, ASHP's and green roofs.
- As an integrated part of the development proposals there are proposed improvements to the public realm outside the venue, providing wider safer areas for walking and seating. Cycle parking is to be provided encouraging active travel along with wayfinding to allow visitors to easily find their way. There will no parking onsite provided within the development, as there are two existing carparks directly south of the proposed site on Leadenflower Street that also offer charging for electrical vehicles. Vehicular access to the building will be restricted to service vehicles during defined periods, and short stay drop-offs for people with mobility issues.

In addition, it is the case that the ability to provide entertainment and recreation closer to home within Crieff, will alleviate the need for people to drive 15 or 25+ miles for this recreation, and will directly reduce the overall carbon footprint and adverse impact on the environment.



Concept - Section

**Response to Conservation Officer's Comments (ref email / file note – 10/10/22)**

**Context** - the East High Street contains various types of property, domestic and commercial, all contributing to a diverse range of forms, scales, and materials. Design notes - read in conjunction with Design Statement.

**Mass and Footprint** - the proposed cinema has been designed in response to a specific brief, site conditions and constraints. A public building with large volumetric space requirements with demanding technical outcomes, located on a corner site, sloping topography with significant level changes. As a civic building consisting of a cinema, bistro, bookshop and radio station, and open outdoor public spaces, its design will inevitably have a contrasting visual presence to the other adjacent properties. Most of which are domestic residential properties.

The overall footprint is a consequence of providing good connectivity and accessibility at ground floor level to the principle uses. The only departure from this design strategy is the locating of Radio Earn on the first floor at the point where the East High Street turns the corner with Leadenflower Street. A considered and satisfactory response to the townscape context and building form.

The existing streetscape presents an open view towards the surrounding area of Strathearn. This visual relationship is retained by providing a low-lying building profile. In addition, by introducing green roofs and solar pv the building incorporates low energy and biodiversity as a fully integrated aspect of the design approach.

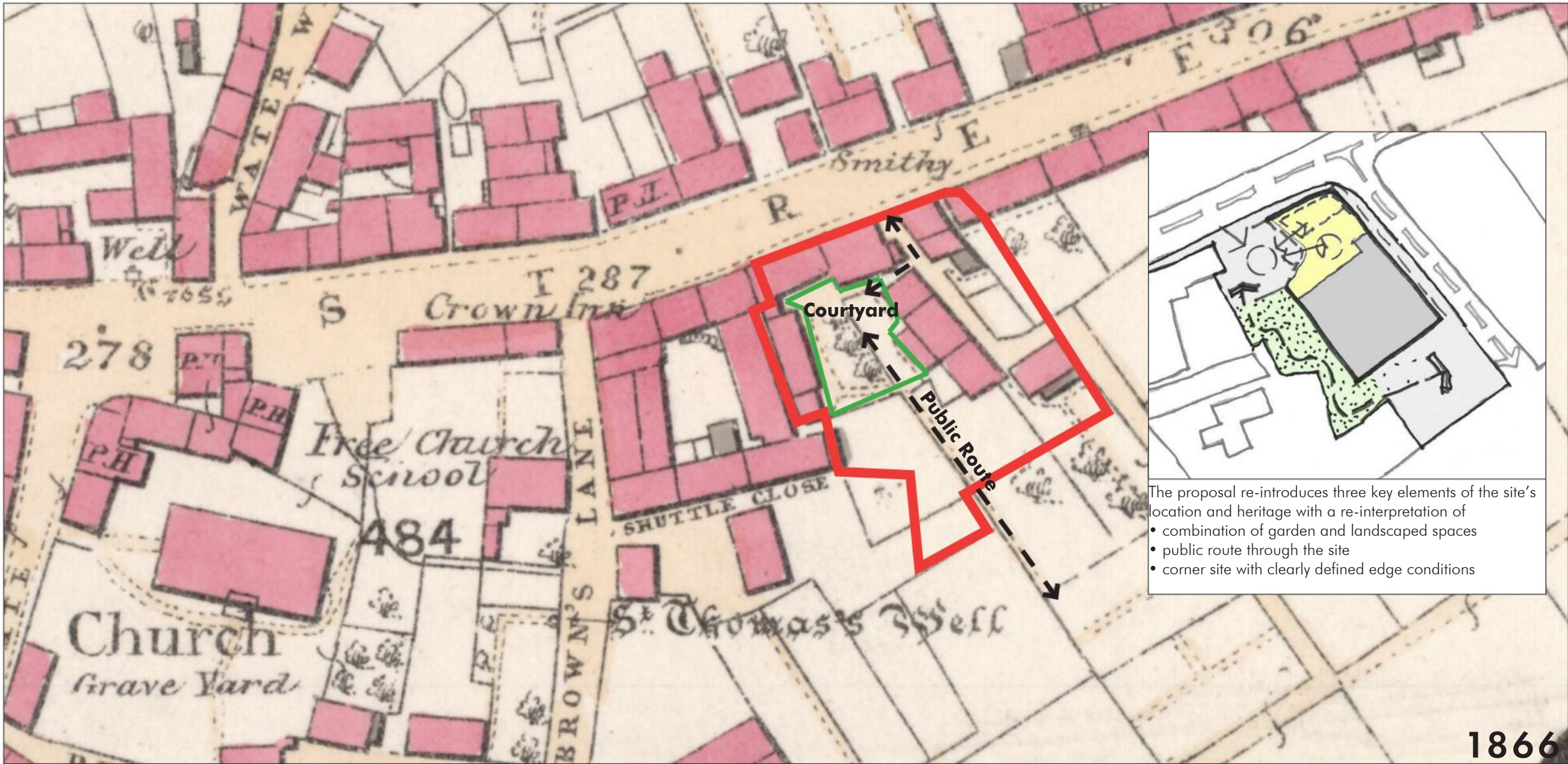
The East High Street frontage has been deliberately set back and opened up creating a much-improved public realm space for all – a courtyard with wild garden.

The new replacement building should, by its intention and purpose, be a landmark building.

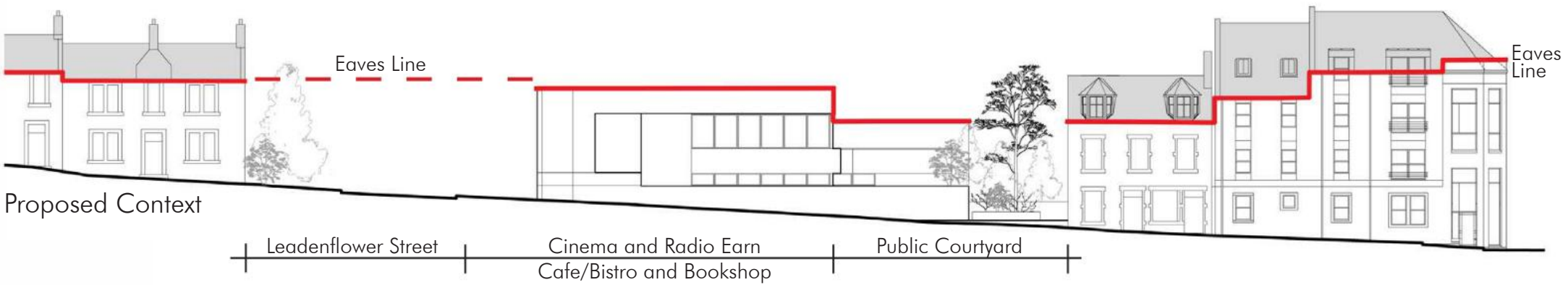
**Horizontal Emphasis** – the proposal is a result of combining a series of integrated functions and spaces into a unified composition representative of a cinema. The surrounding streetscape of terraced buildings present a linear form of low rise dwellings interrupted by other contrasting properties. The introduction of an alternative building type expressive of its function should not be considered 'at odds' when compared to the immediate and wider context of its location and evolving history of the East High Street.

**Materials** - the former Crieff Hotel was of a white render with other examples of white and off-white render seen in the surrounding buildings. The proposed use of a white render would not be out of place. The recycling of any existing materials post-demolition has been considered. This would include reusing the natural stone within the outdoor public areas, subject to condition and fit for purpose.









← - - - ACTIVE FRONTAGE - - - →



Building demolished and replaced by a new intervention that changed the streetscape -  
Planning ref 13/02277/FLL and 13/02278/CON



- The proposal acknowledges the surrounding physical context, conditions, and constraints -
- roof profiles and heights are compatible with adjacent buildings
  - existing narrow pavements have been widened to improve public access and safety
  - provide a public space set back from the East High Street, a designated trunk road

Integrated design with green roofs, solar PV and other low-carbon initiatives. Overall form maintains the 'as existing' skyline and open countryside views beyond.

Extensive landscaped garden introducing good connectivity between adjacent spaces including East High Street, courtyard, car-park and Leadenflower Road.



Facade will include glazing, render and other elements such as graphic signage. Base course materials will be a combination of recycled and re-purposed demolition materials where appropriate e.g. crushed stonework to provide living walls planted as required.



Form and scale - responds positively to existing site conditions and context e.g. corner transition and level changes. The use of landscaping e.g. living walls will introduce additional 'greening' and biodiversity at street level. Where required graphic signage to be introduced.





The building frontage provides a clearly defined building line with the street and pavement. This relationship changes as the pavement widens towards the courtyard area on the East High Street elevation, and into the courtyard space. To further emphasise the townscape importance of this location the Radio Earn facilities have been placed at first floor level, in full view, thereby clearly acknowledging the corner condition within the townscape context between East High Street and Leadenflower Street.

The building presents itself in the round as a contextual response to the surrounding buildings and spaces defined by the East High Street, Leadenflower Street, Car Park and back land area. This is achieved by acknowledging the existing townscape of varied types, styles and conditions by introducing a contemporary architecture that presents a contrasting intervention representative of its purpose and time. Thereby improving and enhancing the area in which it is situated.

Internal public spaces can be accessed directly off the courtyard and interconnect with each other. These 'front of house' spaces have large areas of glazing to achieve a strong visual 'on street' and courtyard presence of the spaces and provide significant daylight.

The courtyard space provides improved public access and safety, potential for outdoor events and a gathering area. As a fully accessible outdoor public space it has good connectivity to the interior spaces and wild garden. It will enable the interior space and uses to 'spill out' and extend the social aspects of the programme within a clearly defined semi enclosed landscape terrace. The elevated positing of the terrace will overlook the wild garden and provide views to the surrounding countryside beyond.

The wild garden provides a natural habitat for encouraging and supporting biodiversity, locating SUDS, providing a direct public route from Leadenflower car park and surrounding neighbourhood. The open space also provides a distinctively 'green space' separation between the new building and neighbouring properties.

Low - zero carbon generating technologies will be an integrated part of the design's strategic definition. This will include a fabric first approach of high performance u-values combined with the use of natural daylight/ventilation, thermal mass, solar PV, ASHP's and green roofs.

The overall architectural form and scale has been developed to clearly express each key element of the programme – public realm, open interior, closed interior and corner condition. This design approach will be developed further with material selection and detailing to articulate the form and its constituent parts within a unified composition.

The larger and more introverted cinema spaces have been located within the lower sections of the site to minimise their visual impact by taking advantage of the significant level changes. Whilst the entrance foyer and public spaces have been located 'front of house' on the East High Street to present a clearly defined street presence and outdoor civic space.

**Response to Conservation Officer's Comments (ref email / file note – 10/10/22)**

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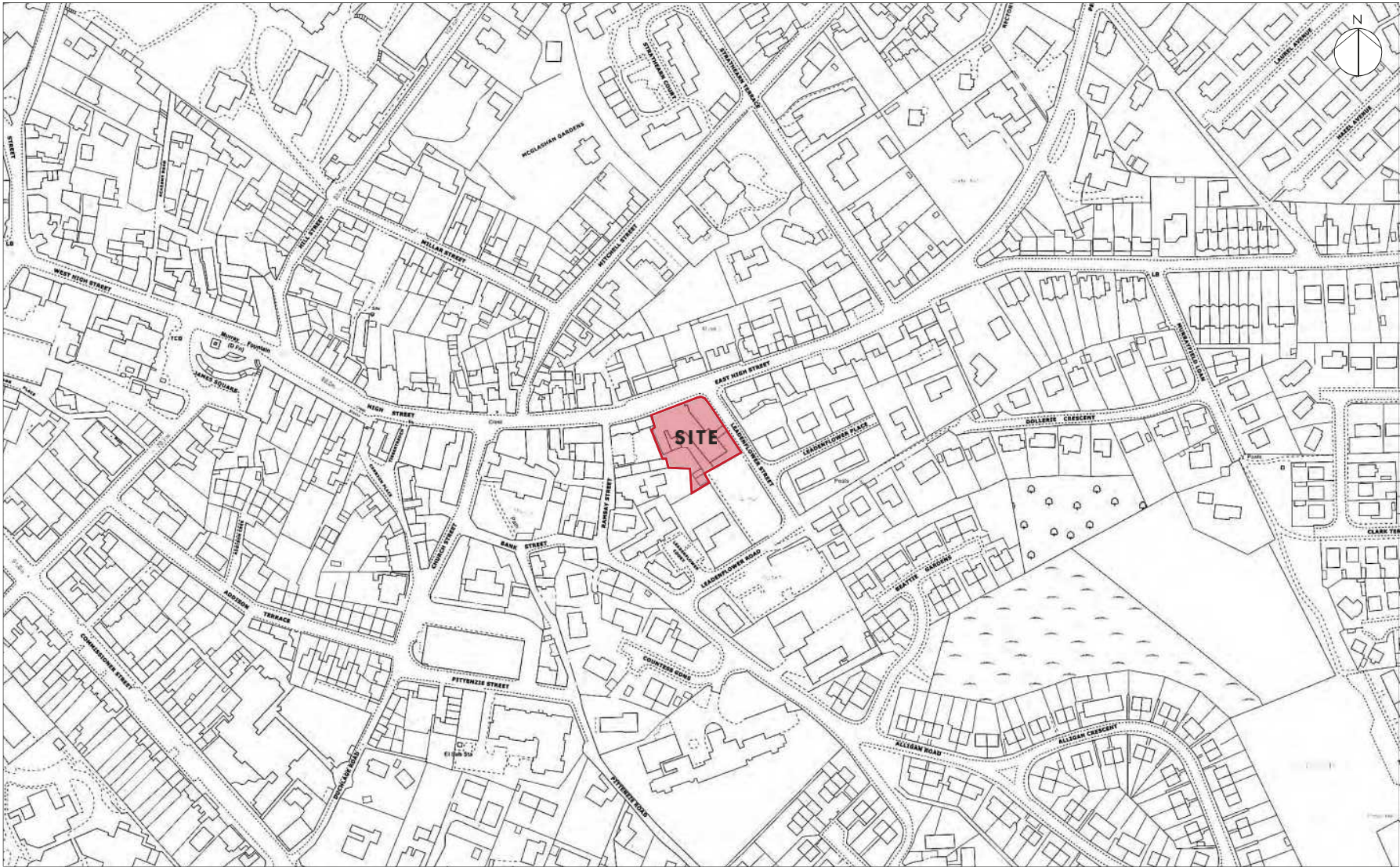
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Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

Location Plan





Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

Existing Buildings



EXISTING SITE PLAN 1:200



01 EAST HIGH STREET ELEVATION



02 LEADENFLOWER STREET ELEVATION



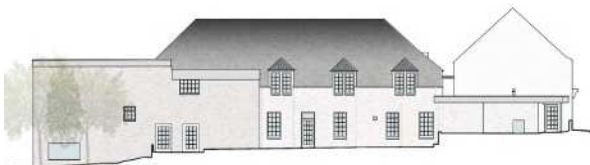
03 REAR ELEVATION

# Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

## Existing Buildings



ELEVATION 01 - North



ELEVATION 02 - East



Fabric condition detail



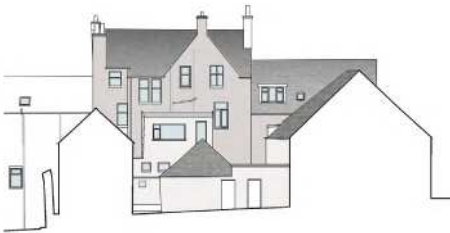
Gable condition



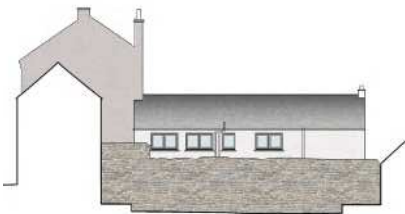
ELEVATION 03 - South



ELEVATION 04 - West



ELEVATION 05 - South



ELEVATION 06 - West



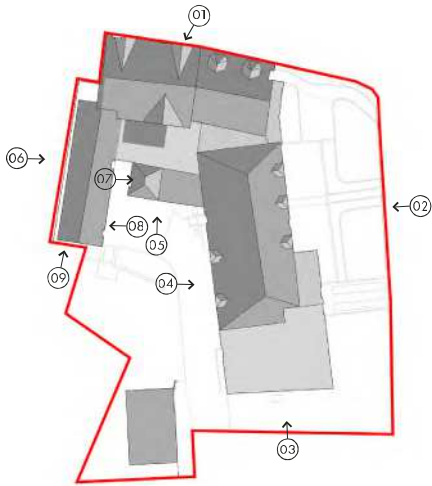
ELEVATION 07 - West



ELEVATION 08 - East



ELEVATION 09 - South



Elevation key: not to scale



Rear extensions

Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

Proposed Ground Floor Plan



PROJECT:  
Proposed demolition of the former Crieff Hotel and replacement cinema and community radio hub, with extended public realm works

DATE:  
SEPT 22  
DRAWN:  
EL

TITLE:  
Proposed Ground Floor Plan  
PURPOSE:  
Full Planning  
SCALE:  
1:100

DRAWING:  
PL102  
REVISION:  
A

FERGUS PURDIE ARCHITECT  
SARIELVILLE STREET, PERTH  
PH1 5PF  
01753 444122  
info@ferguspurdiearchitect.co.uk





Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

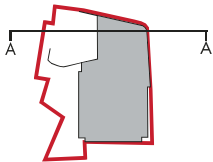
Proposed Elevation and Typical Section



NORTH ELEVATION - EAST HIGH STREET



SECTION A-A



Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

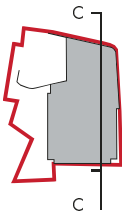
Proposed Elevation and Typical Section



EAST ELEVATION - LEADENFLOWER STREET



SECTION C-C

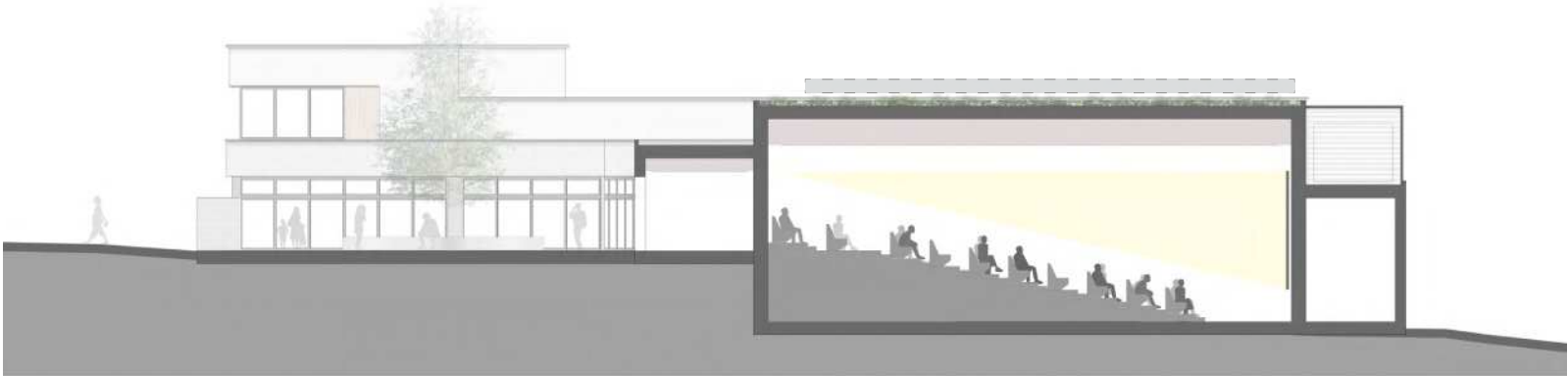


Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

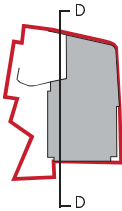
Proposed Elevation and Typical Section



WEST ELEVATION - COURTYARD



SECTION D-D







Aerial axonometric



View from East High Street



Bistro and bookshop



**LRB-2023-02**

**22/01282/FLL – Erection of a cinema and community radio hub and associated works, 47-49 East High Street, Crieff, PH7 3HY**

## **PLANNING DECISION NOTICE**

## **REPORT OF HANDLING**

**REFERENCE DOCUMENTS** *(part included in applicant's submission, pages 193-196 and 200)*





Creative Crieff  
c/o Fergus Purdie Architect  
Fergus Purdie  
5A Melville Street  
Perth  
PH1 5PY

Pullar House  
35 Kinnoull Street  
PERTH  
PH1 5GD

Date of Notice: 8th December 2022

## **TOWN AND COUNTRY PLANNING (SCOTLAND) ACT**

Application Reference: **22/01282/FLL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 15th August 2022 for Planning Permission for **Erection of cinema and community radio hub and associated works 47 - 49 East High Street Crieff PH7 3HY**

**David Littlejohn**  
**Head of Planning and Development**

### **Reasons for Refusal**

1. The proposed works would have an adverse impact on the character and visual amenity of the site. The proposal is therefore contrary to Policy 28A of the Perth and Kinross Local Development Plan 2 (2019) which sets out that development in a conservation area must preserve or enhance its appearance; and Policy 1A of the Perth and Kinross Local Development Plan 2 (2019) which seeks to ensure that all new development respects the character and amenity of the area concerned.

### **Justification**

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan.

### **Notes**

The plans and documents relating to this decision are listed below and are displayed on Perth and Kinross Council's website at [www.pkc.gov.uk](http://www.pkc.gov.uk) "Online Planning Applications" page

Plan Reference

01

03

04

05

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16

# REPORT OF HANDLING

## DELEGATED REPORT

Ref No	22/01282/FLL	
Ward No	P6- Strathearn	
Due Determination Date	14th October 2022 Extended to 14th December 2022	
Draft Report Date	5th December 2022	
Report Issued by	DB	Date 6 <sup>th</sup> December 2022

**PROPOSAL:** Erection of cinema and community radio hub and associated works

**LOCATION:** 47 - 49 East High Street Crieff PH7 3HY

### SUMMARY:

This report recommends **refusal** of the application as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

### Background and description of proposal

The Crieff Hotel is formed of a group of adjoining buildings within the Crieff Conservation Area, on the corner of East High Street and Leadenflower Street. The hotel ceased operating in 2017 and has been vacant since. Planning permission is sought for a replacement development incorporating a cinema and community radio hub. An associated application for conservation area consent has been submitted for demolition of the existing buildings on the site (21/01850/CON).

### SITE HISTORY

89/00131/FUL DORMER WINDOW EXTENSION AT THE 9 March 1989 Application Approved

91/01863/FUL ALTERATIONS TO 2ND FLOOR BEDROOMS AT 21 November 1991 Application Approved

08/01680/FUL Alterations and part change of use from hotel to 6 residential units 7 January 2009 Application Withdrawn

14/00965/FLL Alterations to building and erection of boundary wall 17 September 2014 Application Approved

21/01849/FLL Demolition clearing works, erection of hoarding and formation of a community space comprising community event container unit, seating area, landscaping and associated works 28 October 2022 Application Withdrawn

21/01850/CON Demolition of former hotel Application Pending Consideration

## **PRE-APPLICATION CONSULTATION**

Pre application Reference: Not applicable

## **NATIONAL POLICY AND GUIDANCE**

The Scottish Government expresses its planning policies through The National Planning Framework, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Creating Places, Designing Streets, National Roads Development Guide and a series of Circulars.

## **DEVELOPMENT PLAN**

The Development Plan for the area comprises the TAYplan Strategic Development Plan 2016-2036 and the Perth and Kinross Local Development Plan 2 (2019).

### **TAYplan Strategic Development Plan 2016 – 2036 - Approved October 2017**

Whilst there are no specific policies or strategies directly relevant to this proposal the overall vision of the TAYplan should be noted. The vision states *“By 2036 the TAYplan area will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice where more people choose to live, work, study and visit, and where businesses choose to invest and create jobs.”*

### **Perth and Kinross Local Development Plan 2 – Adopted November 2019**

The Local Development Plan 2 (LDP2) is the most recent statement of Council policy and is augmented by Supplementary Guidance.

The principal policies are:

Policy 1A: Placemaking

Policy 1B: Placemaking

Policy 10: City, Town and Neighbourhood Centres

Policy 28A: Conservation Areas: New Development

Policy 28B: Demolition within Conservation Areas

## **OTHER POLICIES**

### **Historic Environment Policy for Scotland 2019**

This policy supersedes the Historic Environment Policy Statement 2016 and provides guidance to planning authorities on decision-making where it will affect the historic environment.



## CONSULTATION RESPONSES

Perth And Kinross Heritage Trust: The site is archaeologically sensitive. Conditions should be attached requiring standing building recording and a programme of archaeological works.

Scottish Water: No objection

Transport Planning: No objection. Conditions recommended to require secure cycle parking, appropriate reconstruction of the footway on Leadenflower Street and submission of a Staff Travel Plan and a Construction Management Traffic Scheme.

Environmental Health (Noise Odour): No objection. Conditions recommended in relation to dust management during construction, noise, ventilation and lighting.

## REPRESENTATIONS

2 representations were received:

- A general comment welcoming the proposal but raising concerns in relation to noise.
- An objection in relation to resident parking and construction traffic.

These points are covered in the relevant sections of the report below.

## ADDITIONAL STATEMENTS

Screening Opinion	EIA Not Required
Environmental Impact Assessment (EIA): Environmental Report	Not applicable
Appropriate Assessment	AA Not Required
Design Statement or Design and Access Statement	Submitted
Report on Impact or Potential Impact eg Flood Risk Assessment	Not Required

## APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise. The Development Plan for the area comprises the approved TAYplan and the adopted LDP2.

In this instance, section 14(2) of the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 places a duty on planning authorities in determining such an application as this to 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. Section 64(1) of the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 is relevant and requires planning authorities to pay

special attention to the desirability of preserving or enhancing the character or appearance of the designated conservation area.

The determining issues in this case are whether; the proposal complies with development plan policy; or if there are any other material considerations which justify a departure from policy.

### **Policy Appraisal**

The placemaking policies state that development must contribute positively to the quality of the surrounding built and natural environment. The design, density and siting of development should respect the character and amenity of the place.

The conservation area policy states that development within a conservation area must preserve or enhance its character or appearance. The design, materials, scale and siting of a new development within a conservation area, and development out with an area that will impact upon its special qualities should be appropriate to its appearance, character and setting.

In this case it is considered that the design of the proposed building would not make a positive contribution to the streetscape, and would not preserve or enhance the Crieff Conservation Area.

Policy 28B sets out that where a building in a conservation area is considered to be of value there will be a presumption in favour of its retention and restoration or the current or another appropriate use.

While it is apparent that the existing building group makes a positive architectural contribution to the town centre, it has been established during consideration of the accompanying application for conservation area consent (21/01850/CON) that demolition could be accepted on the basis of current market conditions and the practical and economic obstacles to viable reuse of the buildings. Nevertheless, for demolition to be approved Policy 28B requires an acceptable detailed application for redevelopment of the site.

The proposed reuse of the site as a cinema/ community radio hub is considered appropriate in the context of Policy 10 (town and neighbourhood centres), which supports leisure, recreation and community facilities which contribute to the character and viability of the area.

### **Design and Layout**

The existing buildings facing on to East High Street date from the turn of the 20<sup>th</sup> century. A further traditional building to the rear has been substantially altered, and its appearance compromised by the addition of a large, flat-roofed extension to the south, and the adjacent car park. It retains an attractive frontage in part, with a steeply pitched roof and hipped dormers. The townscape in this section of East High Street is of a traditional character, enclosed on both sides with buildings of 2-3 storeys fronting the road. Leadenflower Street provides views of Strathearn to the south.

The application proposes a replacement development comprising of a cinema, community radio hub and associated works. The cinema building is sited at the eastern edge of the site, with a courtyard and garden to the west. The building varies in height but is of two storeys facing East High Street. The ground floor plans show 2 cinema screens, a café and bookshop, entrance foyer and box office with waste storage and plant room adjacent to the car park at the rear. The first floor level incorporates the proposed community radio hub and an external roof terrace facing Leadenflower Street.

No detailed information has been provided in relation to external finishing materials, but submitted visualisations show white render with areas of stone and timber cladding, and a sedum roof finish with PV panels on the main roof section.

Although the proposed use will dictate the form to an extent, the proposed flat-roofed form is relatively low comparative to adjacent buildings, and results in a horizontal emphasis which is at odds with the established streetscape. The extensive white render would appear particularly prominent, and may present future maintenance issues in terms of high level staining and discolouration. The massing of the proposed building across the site appears inconsistent with the surrounding built form and proportions, and the proposed north and east elevations do not present active frontages to the street.

A contemporary design response is appropriate for an entirely new building, and there is scope for a prominent intervention here given the large corner site. The proposal to incorporate an open courtyard, wild garden and other biodiversity enhancement measures are positive, particularly given the current dominance of cars and parking in this location. The overall design of the current scheme is not considered to be an appropriate response to the context, however, and the proposed wholesale demolition of the existing buildings on the site without due consideration of salvage/ reuse of materials is not a sustainable approach.

No pre-application discussion was sought by the applicant or agent, and while consideration has been given to potential amendments to the current design post-submission, these have not addressed the fundamental concerns.

### **Landscape and Visual Amenity**

The buildings on the site facing on to East High Street are considered to make a positive contribution to the visual variety and interest of the streetscape. The taller of the two buildings has architectural elements of a Baronial character, and is particularly prominent on the approach from the west.

The proposed development would substantially alter the streetscape in this part of the conservation area and is considered to result in an adverse impact on visual amenity.

### **Residential Amenity**

The proposed use is considered an appropriate addition to the existing mix of uses within the town centre. In order to ensure that residential amenity would be

protected, the Environmental Health team recommended conditions to be attached in relation to dust management during construction, noise, ventilation and lighting.

### **Roads and Access**

The application has been reviewed by the Council's Transport Planning team who raised no objections, but recommended conditions to facilitate secure cycle parking and appropriate reconstruction of the pedestrian footway on the west side of Leadenflower Street.

An objection was submitted in relation to the impact on local residents due to construction vehicles. Submission of a Construction Management Traffic Scheme would be required to ensure that this is appropriately managed. Submission of a Staff Travel Plan has also been requested.

### **Drainage and Flooding**

The application is not considered to raise any concerns in relation to drainage and flooding.

### **Conservation Considerations**

The application site is within the Crieff Conservation Area and has therefore been assessed against the relevant policies as set out above.

### **Natural Heritage and Biodiversity**

An ecology survey report was submitted with the application. This was reviewed by the Council's Biodiversity officer and considered satisfactory subject to conditions.

### **Developer Contributions**

The Developer Contributions Guidance is not applicable to this application and therefore no contributions are required in this instance.

### **Economic Impact**

Not applicable.

### **VARIATION OF APPLICATION UNDER SECTION 32A**

This application was varied prior to determination, in accordance with the terms of section 32A of the Town and Country Planning (Scotland) Act 1997, as amended. The variations incorporate changes to the ground floor layout and site plan, as set out in drawings 16 and 17.

### **PLANNING OBLIGATIONS AND LEGAL AGREEMENTS**

None required.

## **DIRECTION BY SCOTTISH MINISTERS**

None applicable to this proposal.

## **CONCLUSION AND REASONS FOR DECISION**

In conclusion, the application must be determined in accordance with the adopted Development Plan unless material considerations indicate otherwise. In this respect, the proposal is not considered to comply with the approved TAYplan 2016 and the adopted Local Development Plan 2 (2019). I have taken account of material considerations and find none that would justify overriding the adopted Development Plan. On that basis the application is recommended for refusal.

### **Reasons for Refusal**

1. The proposed works would have an adverse impact on the character and visual amenity of the site. The proposal is therefore contrary to Policy 28A of the Perth and Kinross Local Development Plan 2 (2019) which sets out that development in a conservation area must preserve or enhance its appearance; and Policy 1A of the Perth and Kinross Local Development Plan 2 (2019) which seeks to ensure that all new development respects the character and amenity of the area concerned.

### **Justification**

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan.

### **Informatives**

Not Applicable.

### **Procedural Notes**

Not Applicable.

## **PLANS AND DOCUMENTS RELATING TO THIS DECISION**

01  
03  
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## SOLAR PV

### DESIGN SPECIFICATIONS + DATA SHEET

Leadenflower Cinema and Community Radio Hub  
East High Street, Crieff PH7 3HY



# PV DESIGN CONSIDERATIONS

NEW BUILD FLAT ROOFS



# 1 INTRODUCTION



**Tom Raftery**

BauderSOLAR Product  
Manager

The Climate Change Act established a target for the UK to reduce its emissions by at least 80% from 1990 levels by 2050.

*"As rooftop solar PV arrays become a consistent element of both new build and refurbishment commercial building specifications it is vital that these schemes have a cohesive design approach that embraces all elements of the project at the planning stage. Understanding the building's energy profile, the impact of the array on the building's fabric and using the highest quality equipment throughout are all vital for success".*

In the UK, solar photovoltaic (PV) is the most popular renewable energy and its deployment is rising rapidly across the globe, particularly because climate change and resource scarcity are on the agenda of every government and major corporation in the world. Despite recent UK Government policy changes, the number of large, flat roof installations should still rise as local authorities and businesses look to reduce their carbon footprint and gain energy security for the future.

All too often within the construction industry, photovoltaic specifications focus on energy efficiencies and outputs of the solar panels, omitting to give the same focus to ensuring the rooftop array is installed with methods that have as little impact on the building and its waterproofing as possible and that the array works to its maximum potential for its entire lifespan rather than just becoming a 'tick box' exercise to achieve sustainability credits.

This design guide is aimed at designers considering the inclusion of a PV array on new build flat roof construction projects and outlines the key elements to be mindful of to ensure the design is sustainable, protects the building and meets lifespan expectations.

## Contents

<b>1</b>	Introduction	<b>02</b>
<b>2</b>	Drivers and Solutions	<b>03</b>
<b>3</b>	Roof Design Considerations	<b>04</b>
<b>4</b>	Array Design and Shading	<b>05</b>
<b>5</b>	Fixing and Installation Methods	<b>06</b>
<b>6</b>	Six Steps to Deliver a PV System	<b>08</b>
<b>7</b>	Project Studies	<b>10</b>





## Drivers for New Build Applications

Incorporating photovoltaic panels into a design brings all the benefits of low maintenance renewable energy generation to a project. Below are just some of the key drivers for choosing a PV scheme in a new build application:

- BREEAM requirements for buildings often call for site sourced renewables. Minimum of 30% CO<sub>2</sub> reduction from site based renewables is required to achieve maximum credits.
- Satisfying local planning guidelines such as the London Plan, for example the Scottish government has tightened requirements calling for a minimum 1.5kWp per plot for new homes.
- Provide energy security for the future and save money.
- Solar PV is a simple and cost effective method for builders and developers to meet their SAP and SBEM targets, as well as assistance in achieving Part L.

## Sizing of PV Systems

The sizing of a PV array can be determined by a number of elements that are often driven by the overall aim of the scheme. In new build applications, common motivating factors are meeting BREEAM, to save money and provide energy security. In these instances the system size will be determined by the following considerations:

### Meeting Planning or Part L Requirements

For new build projects, the principal factor that will determine the size of an array will be meeting the buildings energy performance or Part L requirements. The size of the array will be determined by the SBEM/SAP or building energy model.

### Usable, Non-Shaded Roof Space

Available roof space will often be the clients biggest limiting factor, particularly for new build applications where the solar array is competing for roof space with other M&E equipment.

### Client's Budget

Often a project's financial plan can initially allow for the inclusion of a PV system and capital budget may determine scheme size rather than optimal return on investment or roof size.

### Building Energy Consumption

Although often an afterthought on new build schemes, the optimal return on investment will occur if the system is sized to match the building's energy profile. The goal is to provide a solution where all the energy produced is consumed by the building. Buildings that are used predominantly during the day such as; offices, schools and factories are perfectly suited to the energy profile produced by a solar array.

## WHY USE PV ON FLAT ROOFS?

**A flat roof is often a wasted resource and unlikely to be shaded which makes it the ideal location for a PV array.**

A PV array is safe and easy to install and delivers energy close to the point of consumption.

The vast majority of flat roofs are not at eye level and so the PV array is generally hidden from view at street level.

Large commercial or public buildings often have flat roofs as well as the most suitable energy profile to benefit from a PV array.





# 3 ROOF DESIGN CONSIDERATIONS

## HAVE YOU CONSIDERED?

Durability of the waterproofing system is key and its life span should, at a minimum, match that of the PV scheme, as well as be able to withstand any additional access requirements for maintenance.

In new build flat roof construction, the availability of roof space should be considered at concept stage to meet any planning conditions or BREEAM requirements, with other rooftop elements and safe access systems designed and incorporated appropriately.

### Meeting BREEAM, Planning, 'Merton Rule' and LZC Technologies

In new build applications, the sizing of the solar PV array will usually be influenced by low or zero carbon (LZC) technology targets either driven by BREEAM or local planning conditions. The array size will be determined by efficiencies of other elements of the building design and so it is important to establish available roofspace and what can be achieved from this area. The maximum outputs from the array can therefore be established as early as possible and help drive decisions on other building elements.

### Combining Solar PV and Green Roofs

In urban areas the inclusion of both a green roof and a photovoltaic system can be a prerequisite for the building, which can bring challenges to the designer on how to locate both within the roof area. Where roof space is

restricted the two technologies can compete for position and so layering the green roof and PV array so that they can co-habit the same area is a feasible solution.

Ideally, the PV panels should be raised above the substrate and vegetation, allowing the plants to also grow beneath the panels with sufficient light and moisture levels.

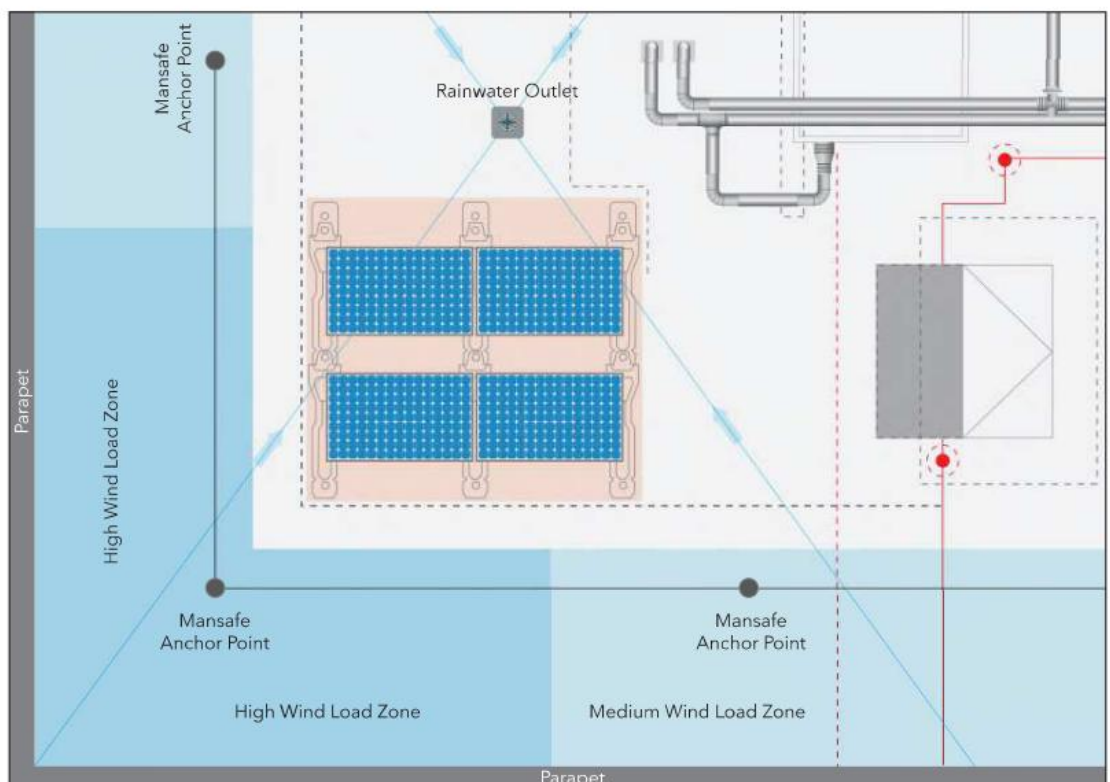
The selection of vegetation and growth height is important so that the plants do not create areas of shading on the panels.

### Design Impacts

The weight loading of different systems and their installation methods can be impactful on the construction where a ballasted PV system on a building in an exposed location can impose loads as high as 160Kg/m<sup>2</sup> compared to other methods of PV installation which could impose as low as 9Kg/m<sup>2</sup>.

The selection and design of a mansafe system or the parapet height required for safe maintenance access can have an influence as they too can create areas of permanent or fluctuating shade that would impact on the output of the PV panels.

The location of the solar array will be determined by a number of factors including wind load zones, other plant and equipment and maintenance access to roof elements such as rainwater outlets.



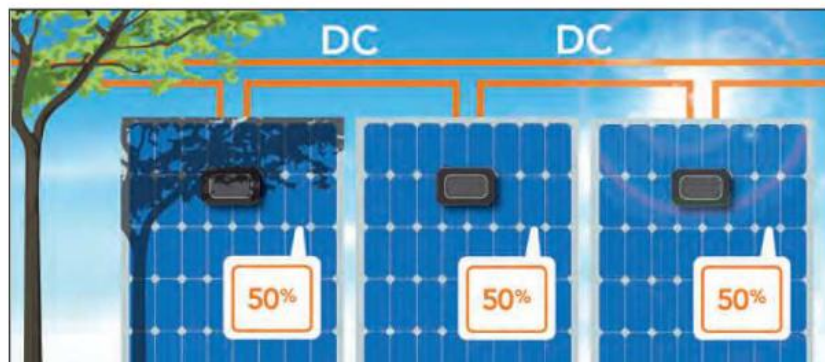
Shading will adversely affect the output of any solar array whether this is from other buildings, rooftop plant, balustrades or tall trees and all efforts must be made to avoid this. The risk of shading should be limited through design of the array and its location, but some shading could be unavoidable, particularly on congested roofs.

## Power Optimisation

If partial shading of some panels is inevitable the entire string will underperform. Installing power optimisers will mitigate this reduction in efficiency and enable each individual panel in the string to be tracked so that the maximum energy is produced.

A power optimisation system, such as SolarEdge, will track each module's performance individually and provides enhanced capabilities so that full visibility of the system's performance can be scrutinised by the client once the system goes live.

Traditional Inverter



SolarEdge Inverter with Power Optimisation



## Monitoring the System

A complete monitoring solution increases the reliability by ensuring that issues can be immediately identified and dealt with quickly, providing the most productive performance on a permanent basis.

Most systems will be web-based to give easy access to real time data.





# 5 FIXING AND INSTALLATION METHODS

## TWO KEY OPTIONS FOR INSTALLATION

There are two fundamental options for fixing a PV system to a flat roof, ballasted or mechanical. A ballasted system adds additional weight to anchor the array to the roof whereas mechanical methods cover two key practises, either they penetrate the roof covering and are fixed to the deck or they do not and leave the waterproofing system intact.

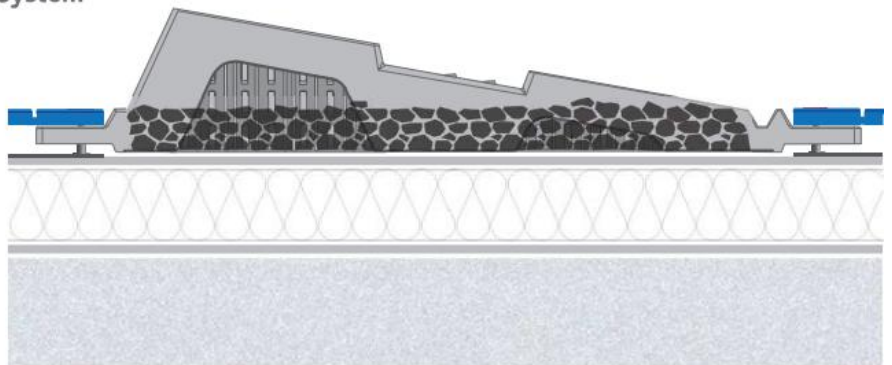
### Ballasted Systems

Installing a ballasted PV system requires confirmation from a structural engineer that the additional weight and wind load can be accepted into the design. The ballast itself can take different formats and it is important to confirm that the static load created by the designed ballast will be appropriate and sufficient in accordance with the wind load calculation report.

In all ballasted applications a suitable protection layer must be allowed for and this should be agreed with the waterproofing warranty supplier.

Where possible, the ballast should allow for a spread of load across the roof rather than any point or line loading.

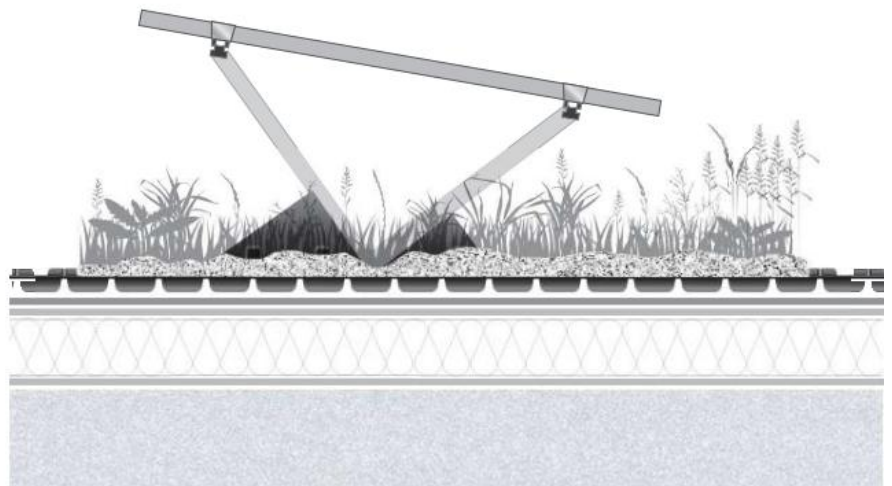
### Generic Ballasted System



### Bauder BioSOLAR for Green Roofs

The substrate and vegetation provide the ballast to secure the array on the roof.

The entire roof area qualifies as a green roof and if a biodiversity finish is specified this can further enhance the BREEAM credit rating for the roof element.



### Mechanically Fixed Systems

Mechanically fixed solutions are used where ballasted systems are not suitable due to the additional imposed load.

#### Non-Penetrative Mechanical Fixing

This method is where the mounting system sits completely separate atop the waterproofing via substructures, that are held onto the roof through mounting plates and welding overlying membrane sleeves to the uppermost layer of the waterproof covering.

These systems typically have large and stable attachment footprints with fixing tolerances that allow for levels of movement to occur without detriment to the entire stability of the array.

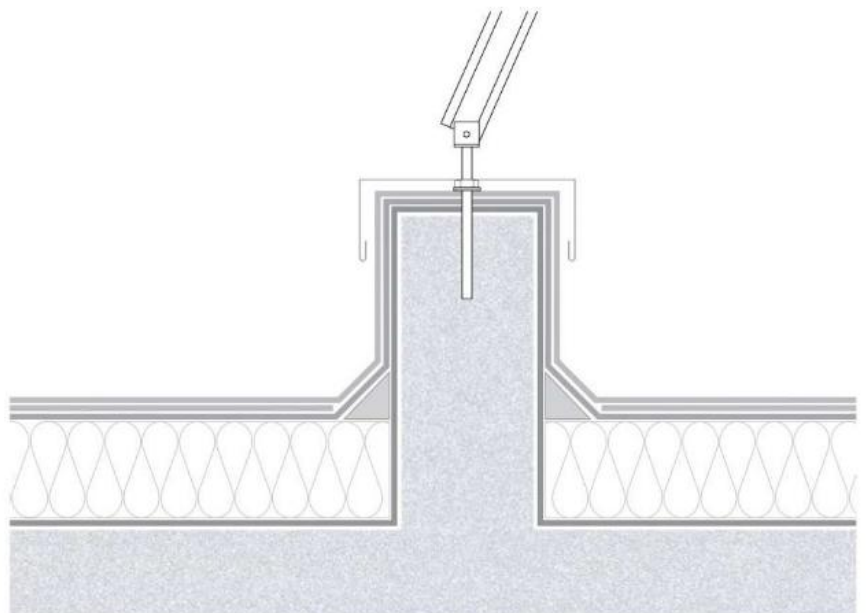
**BauderSOLAR for Flat Roofs**



#### Penetrative Mechanical Fixings

These also have two generic forms where the array is installed either via the creation of a plinth or a proprietary fixing post, the size and shape of which can have an impact on the safe waterproofing and thermal continuity of the roof. These forms of attachment can be the only option in pitched membrane applications or where wind loads are particularly high.

These illustrations show typical detail designs for penetrative mechanical fixings.



#### PAUSE FOR THOUGHT

Any penetration of the roof structure and its waterproofing increases risk and could invalidate the manufacturer's guarantee.

Does a penetrative mechanically fixed system really need to be specified or is another installation method possible?



# 6 SIX STEPS TO DELIVER A PV SYSTEM

## PRESTART CHECKLIST

### 1: ROOF LAYOUT

- ☐ Any obstructions?
- ☐ Any shading items?
- ☐ Cable penetration location & type?
- ☐ Fixing method?

### 2: INVERTER / SOLAR CABLE / ENGINEERING

- ☐ Inverter location?
- ☐ Solar cabling location?
- ☐ Meter type?
- ☐ Remote supervision & monitoring system required?

### 3: START DATES

- ☐ Estimated project start date
- ☐ Delivery lead time required

### 4: SCOPE OF WORK

- ☐ Site inspection
- ☐ Network connection G83 or G59?
- ☐ AC side works required?
- ☐ Lightning & surge protection

Full print version available on our website:

[bauder.co.uk/technical-centre](http://bauder.co.uk/technical-centre)

## STEP 1: Delivering the Brief

Be clear about the key factors to be achieved when meeting with your preferred selection of manufacturer/suppliers to cover:

- Why PV is to be included in the building design?
- What is the scheme to achieve? Including the size/output required from the array.
- Site locations that need to be taken into consideration such as shading by overhanging trees or nearby buildings and rooftop plant and equipment etc.

## STEP 2: Design and Specification

Ensure all the parties from within the project delivery team understand the brief and work together so that a cohesive process is presented by the architect, principle contractor and M&E or sustainability consultant.

A roof layout should be produced as early as possible as this will enable all parties to identify any conflicts with other plant equipment and walkways.

Take into account how the different specification elements can get fragmented and consider a solution where the NBS specs under J41, V14 and Q37 (if a green roof is to be included as well) are delivered from a single company. This prevents miscommunication and delivers a single point of contact for responsibility.

Confirm that the proposed waterproofing and attachment method of PV mounting system are fully compatible and that the integrity of the roof finish is uncompromised. Durability of the roofing system should match and exceed the life span of the PV array.

As a minimum specification should outline:

- Output of system
- Module specification
- Mounting solution
- Inverter specification
- Monitoring requirement
- Maintenance requirement

Ensure design liability including wind load calculations are accounted for and included within the guarantee cover proposed.

When connecting a solar power system to the grid, the application process involves the submission of a form to the relevant Distribution Network Operator (DNO) prior to installation.



Different sized systems require different applications with the correct process dependent on the output thresholds:

- G83 Application – can be submitted post installation if the system is deemed to be fewer than 16A per phase (3.68kW).
- G59 Application – needs to be submitted prior to installation for systems deemed to be over 16A per phase and is a legal requirement before installation can commence. An important factor to take into consideration is the time duration for the DNO to confirm and accept that the works can commence on site, which has to be received prior to installation.



# 2

## Design and Specification



X  
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ALL  
AKES

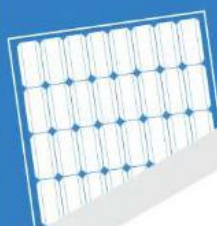
# 3

## Procurement / Contractor Selection



# 4

## Installation



### STEP 3: Procurement / Contractor Selection

The standard procurement process will apply to the installation of the PV system. Ensuring that the PV installer and roofing contractor fully collaborate and understand the site needs and are familiar with both parties requirements is paramount.

They should be fully aware of any installation constraints such as quiet hours, caveats on deliveries or site access.

### STEP 4: Installation

In new build applications, scheduling can often be difficult due to site constraints, consider the following:

- Solar modules can be damaged by other trades – best practice is to leave these until all other roof trades have finished on the roof.
- Often, the roof elements will be installed in advance of the internal installation and commissioning – has this been allowed for?
- Have other trades especially the roofing contractor, been made aware of the array and its impact on their systems? i.e are any penetrations required for cabling or hand rail mansafe systems etc.
- Modules are large, high value items and should be lifted to the roof palletised rather than by hand.

### STEP 5: Sign Off and Guarantee

Guarantees can take many forms including coverage for performance, product manufacture and system warranty for the proper operation of equipment for a specific period of time; less frequently though are yield warranties guaranteeing a minimum energy output of the PV panels over time.

It is worth bearing in mind that other components for the system, including inverters and the waterproofing system, may have different life expectancies than the PV panels. Clearly the best route is to ensure that the replacement of any elements should be safe and easy to reinstate and not entail significant disruption to the roof, building or running of the system.

### STEP 6: Monitoring and Maintenance

In commercial applications, providing the opportunity for staff, clients and building managers to see how much power is being produced by the PV system can encourage energy saving practices and enables the building operator to confirm the real energy output as well as compare it to the array design estimate.

Sophisticated monitoring systems are easily incorporated into the specification and should be set up by the installing contractor. The client or building operator should be trained on how to maximise the system and how to identify outputs that could be increased through safe maintenance.

Where possible the client should undertake a maintenance contract with a specialist.





# 7 PROJECT STUDIES



The University of the West of England (UWE) quadrupled its solar generating capacity through the installation of 1,731 solar panels, enabling it to produce over 400 MWh of electricity each year and making it the largest solar panel array in the UK university sector.

The solar array was installed on the roof of the University Enterprise Zone and the Bristol Robotics Laboratory, which both underwent extensive refurbishment as part of the required works. Prior to the PV being installed, approved contractor Mitie Tilley Roofing overlaid the original single ply waterproofing with over 12,000m<sup>2</sup> of Bauder's lightweight, robust PVC single ply waterproofing system Thermofol. The solar modules, which weigh less than 12Kg/m<sup>2</sup>, were then fitted using a unique penetration-free method by renewable energy specialists Dulas.

The PV system should generate enough electricity each year to; cover half of the energy usage within the building, save around 200 tonnes of carbon and provide annual savings of over £50,000 a year. The university is committed to sustainability and this project is just part of a much wider plan to achieve its carbon reduction goals.

**Fabia Jeddere-Fisher**, Energy Engineer at UWE: *"The system we chose means the panels are welded into place, reducing load, and the need for roof penetrations and thereby risk of leaks. The University will use 100% of the power generated, equal to the amount of nearly 200 homes with solar panels. As a large organisation we want to set an example for others to undertake similar projects."*

## BUILDING BOARD

Project:	UWE Enterprise Zone
Location:	Bristol
Roof Size:	12,000m <sup>2</sup>
Client:	University of the West of England
Main Contractor:	BAM Construction
Specifier	Parsons Brinckerhoff
Approved Contractor:	Mitie Tilley Roofing
PV Installer:	Dulas

## APPLIED PRODUCTS

- 1,713 BauderSOLAR PV modules were fitted generating at least 402 Megawatt Hours of solar power each year.





Clapham Park

BauderBioSOLAR  
Bauder Total Green Roof



The regeneration at Clapham Park involved the demolition of old housing stock to make way for new affordable homes. The 5-storey building with 21 dwellings incorporating the latest rooftop technology which blends a biodiverse green roof and unified solar PV array. This approach met the planning requirements and maximised the limited roof space to generate energy for the residents. The development was certified BREEAM 'Outstanding' due to its environmental, economic and social sustainability attributes.

One of the major challenges of the project was the roof area, which at only 500m<sup>2</sup> needed to include a green roof and a renewable energy system to meet the main objectives of sustainability and energy efficiency of the development highlighted by the planning committee. The roof contributed towards requirements under National Planning Policy Framework (NPPF) Chapter 11: Conserving and enhancing the natural environment and The London Plan 2011 Policy 5.2 – Minimising Carbon Dioxide Emissions, Policy 5.3 – Sustainable Design and Construction and Policy 5.7 – Renewable Energy. The green roof is layered with a raised PV array so that the entire roof qualifies as a green roof whilst also providing energy generation.

The Bauder BioSOLAR system has National House Building Control (NHBC) approval and meets local authority building control (LABC) requirements. The system was installed on zero falls roof deck, making it a very cost-effective solution.

The biodiverse green roof which includes 35 plant species recognised by the RHS as Perfect for Pollinators, covers the totality of the roof area and offers a large variety of vegetation. The building reduces its carbon impact with the highly efficient PIR insulation and generates approximately 10% of the flats usage with a maximum possible output of 75kWp from the 70 PV modules. The solar PV mounting units are ballasted by the substrate and vegetation, removing the need for any penetrating products in the waterproofing.

#### BUILDING BOARD

Project:	Clapham Park
Location:	Clapham Park, Lambeth, London
Roof Area:	500m <sup>2</sup> green roof layered with 11m <sup>2</sup> 6 of PV
Specifier:	PJMA Architects
Approved Contractor:	EJ Roberts Ltd
PV Installer:	M & M Electrical Ltd

#### APPLIED PRODUCTS

- Bauder Total Green Roof System is a premier bituminous waterproofing with a life expectancy of over 40 years.
- Bauder BioSOLAR integrates a green roof and photovoltaics into one system drawing the maximum potential from a flat roof.
- Flora 3 Seed Mix is a blend of 49 British native species seed, to maximise diversity of vegetation on green roofs.

Visit [bauder.co.uk/biosolar](http://bauder.co.uk/biosolar) for more information on the system.





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## Solar PV Solutions



Our photovoltaic solutions are innovative, penetration-free systems for use in flat, green and blue roof applications.

Both our systems are extremely quick to install and provide a cost effective and highly efficient solution.

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■ Bauder BioSOLAR	248
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# OVERVIEW OF SOLAR PV



## UWE ENTERPRISE ZONE

Location: **Bristol**

*"The system we chose means the panels are welded into place, reducing load, and the need for roof penetrations and thereby risk of leaks. The University will use 100% of the power generated, equal to the amount of nearly 200 homes with solar panels. As a large organisation we want to set an example for others to undertake similar projects."*

**Fabia Jeddere-Fisher, Energy Engineer, UWE**





Our photovoltaic solutions are specifically designed to deliver the most efficient energy generation solution on flat and green roofs. Our systems are designed to ensure the waterproofing system beneath remains completely intact and without compromise, which can occur when mechanical fixing methods are used that penetrate the roof.

The entire installation process of both of our photovoltaic systems is quick and simple and only our approved contractors, engineers and installers are fully trained and certified to install our unified rooftop solutions.

Through our systems we guarantee the entire specified roof package rather than a separate element, giving single source point of contact and responsibility to reduce risk.

We have two systems within our photovoltaic portfolio:

### BauderSOLAR for Flat Roofs

Our BauderSOLAR flat roof PV solution is suitable for new build and retrofit projects and features a mounting system that is secured to the roof using membrane-to-membrane welding techniques on our bituminous or single ply waterproofing.

The modules are positioned at a 12° angle to maximise energy generation and can be installed in both south facing and east/west orientations pending on site requirements.

### Bauder BioSOLAR for Green and Blue Roofs with Vegetation

Bauder BioSOLAR is a unified solution for mounting solar PV arrays where the substrate and vegetation provide the ballast to secure the array.

The combination of systems and the height at which the panels are positioned allow for vegetation to establish across the entire roof area helping the building achieve enhanced BREEAM ratings and meet planning targets for both the green roof and solar PV requirements.

### PV Partners – Assuring Quality

We provide the ultimate solution for our clients through our partnerships with JA Solar and LG as we trust their uncompromising quality standards to ensure that every module produced delivers the same quality output and high efficiency.

It is all too common that performance and quality can frequently vary dramatically between/amongst manufacturers, even if the same cells are used and the modules appear to be similar; and so it becomes increasingly apparent that the superiority and reliability of the manufacturer is far more important than selecting modules by output statements alone.

Our ethos is to work so that every Bauder installation is as good as the next.

#### Specification Support



##### Specification downloads:

[www.bauder.co.uk/technical-centre](http://www.bauder.co.uk/technical-centre)



##### Telephone helpline:

0845 271 8800

SOLAR TRADE



# ENVIRONMENTAL CREDENTIALS



Our Solar PV roofs have the potential to count towards BREEAM. If you are working to this assessment standard, please contact a member of our technical team, who can advise on best practice for your individual project.

## Energy

This category encourages the specification and design of energy efficient building solutions towards sustainable use and management throughout the operation of the building's life.

### Ene 01 - Reduction of energy use and carbon emissions

Any low or zero carbon technologies installed can be used to offset emissions arising from regulated and unregulated (for exemplary credits) energy consumption. The requirement details for a private wire arrangement to be in place, i.e. no grid sustainable energy purchase.

**BauderSOLAR PV and Bauder BioSOLAR photovoltaic solutions** create local energy generation from renewable sources. They are specifically designed to deliver the most efficient energy generation solution on flat and green roofs where the installation method ensures the waterproofing beneath remains completely intact and without compromise.

### Aiding Biodiversity and Meeting a Biodiversity Action Plan (BAP)

Our BioSOLAR roof can provide a natural habitat for the local ecology, in which vegetation will establish and provide a home for smaller elements of wildlife as well as insects and invertebrates. The provision of a healthy habitat in a place that could otherwise be empty encourages wildlife to remain in the area, provides support for the natural colonisation of locally arising plants, birds and small animals, boosting a wider spread of species in the area.

## Recycling, End-of-Life and Upcycling of Our Products

In Europe, solar panel disposal falls under the European Union's Waste of Electrical and Electronic Equipment (WEEE) directive and is strictly regulated.

### BauderSOLAR

The individual components of our BauderSOLAR Flat Roof system are single-origin and can be individually removed and completely recycled. The main support structure and locking pin are made from plastic category 05 Polypropylene and is widely recycled; with the base plate, bayonet fitting and module clamp all from plastic category 07 Polyamide which is recycled into plastic lumber and other custom-made products.

### Bauder BioSOLAR

The DSE40 anchor boards for our BioSOLAR system are made from polypropylene which is widely recycled.

The support system for our Bauder BioSOLAR system is made from coated steel; the arms, support rails and clamps can be recycled through melting down and reforming the metal without losing quality.





# TECHNICAL CREDENTIALS

## Regulations, Guidelines and Standards

Our products are built in accordance with applicable standards and technical regulations and therefore correspond to all relevant technical standards. This applies to both material selection and structural design.

BSEN 62446 Grid Connected Photovoltaics  
BSEN 61853-1 Defining Solar Photovoltaic Power  
BSEN 1991-1-4 Wind Actions on Structures  
BRE Digest DG 489 rev 20145

The aluminium alloy framed modules are certified through VDE (IEC 61215 Ed. 2, IEC 61730-1 Ed.1 and IEC 61730-2 Ed. 1)

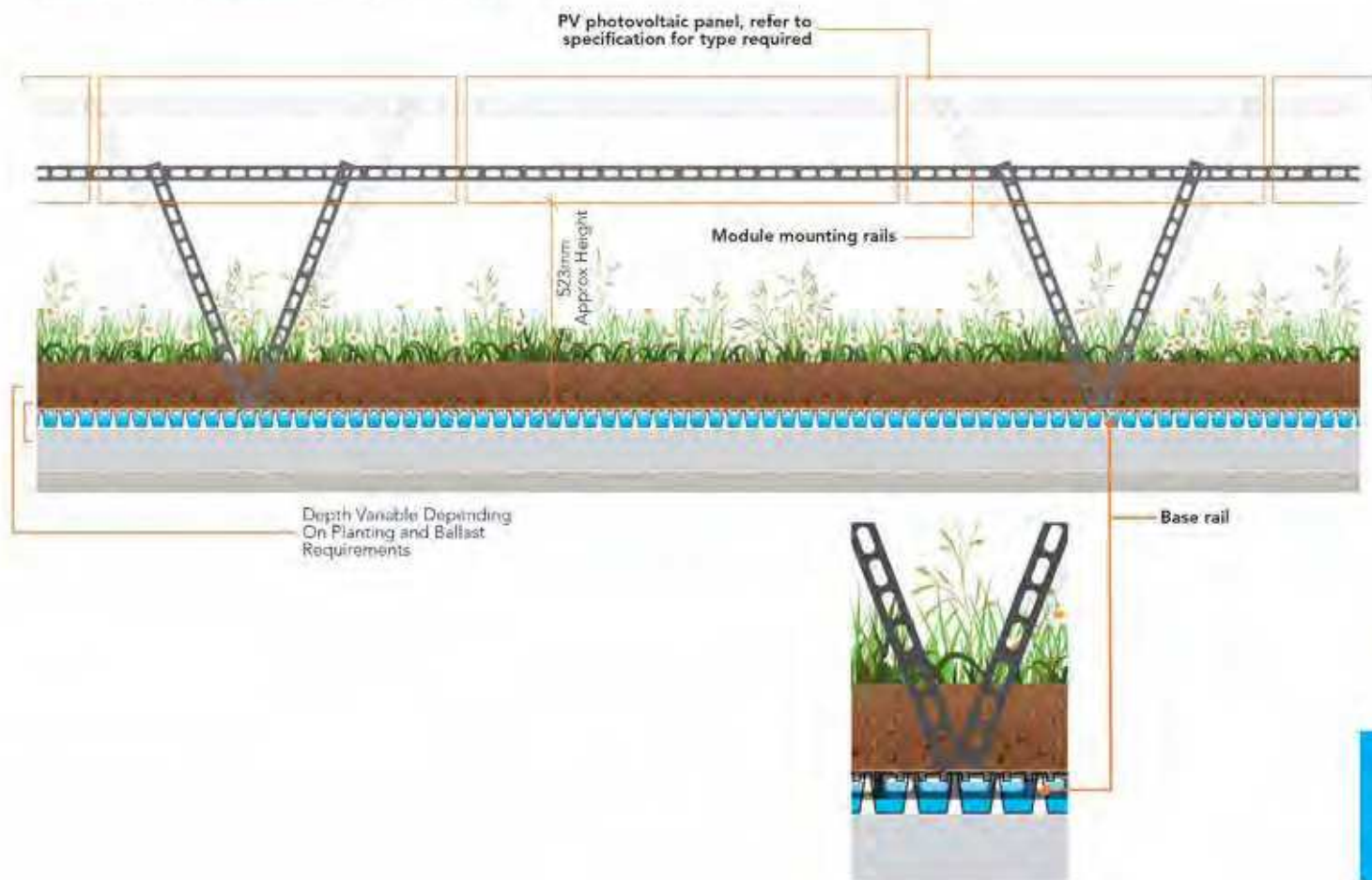
## Array Designs

Bauder PV array proposals are designed to meet MCS PV Guide requirements and IET Codes of Practice.

## Maximising the Roof Area

Our photovoltaic solutions are designed to allow for the maximum number of modules to be installed on the roof area for both east-west or south orientations. This gives prime energy generation from the roof compared to standard 30° fixed tilt solutions.

## Bauder Biosolar Module Section - Cross Section



## Assuring Quality of PV Panels

It is all too common that performance and quality can vary dramatically between manufacturers, even if the same cells are used and the modules appear to be similar; and so it becomes increasingly apparent that the reliability of the manufacturer is far more important than selecting modules by output statements alone.

The superior manufacturing and quality testing of the JA Solar and LG modules ensure that quality output and high efficiency is standardised on all our installations.

## Increasing Efficiency

The BioSOLAR system has the advantage of increasing the efficiency of the solar array because the vegetation preserves ambient rooftop temperatures, keeping the PV modules at optimal output and increasing energy yields by 5% - 7%.

SOLAR TRADE



# BAUDERSOLAR FOR FLAT ROOFS



Image courtesy of  
Ivan Moore  
Lambert Smith Hampton

## 11 FREEBOURNES ROAD

Location: **Witham**

*"We actively look for opportunities to implement renewable energy and knew that this storage facility lent itself well to PV retrofit. Our system selection process involved the due diligence you would expect from a local authority and we decided to go with Bauder because of its comprehensive system portfolio that meant we could have a single source supply and all-inclusive guarantee; giving us complete confidence in the roof's performance."*

**Julian Sanchez, Commissioning Delivery Manager for Essex County Council**

11 Freebournes Road was a large derelict warehouse located in Witham, that underwent major renovation to transform it into a storage centre for Essex County Council. The roof was waterproofed with over 5,200m<sup>2</sup> of Bauder's reinforced bitumen system and then fitted with 588 solar PV modules enabling the client to generate at least 134.70 Megawatt Hours of solar power each year.



Image courtesy of Essex County Council



Our flat roof solar PV solution is an aerodynamically optimised system for framed modules suitable for both new build and retrofit projects. The mounting units are secured to the roof using membrane-to-membrane welding techniques on our bituminous or single ply waterproofing systems. This installation method means that the roof is not compromised by penetrations for fixings nor is it ballasted, which would add significant weight loading to the roof.

### Key Features

- Risk-free installation due to penetration free fixing methods to the flat roof waterproofing.
- Tool free installation of modules is quick and simple.
- High output to roof space ratio.
- Range of PV modules available to suit client needs and budget.
- Lightweight system 9-12.5Kg/m<sup>2</sup>, depending on the module selected.
- Aerodynamic to reduce the impact of wind uplift.
- Low profile with modules set at 12°, which can overcome some planning challenges.
- Single source for complete design of waterproofing and PV array with clear accountability.

Our combined solar array and waterproofing offer provides a single-source solution with clear accountability to reduce risk and bring peace of mind through all aspects of the flat roof.

The BauderSOLAR solution utilises high efficiency JA Solar and LG modules with a range of panel options to suit client needs and budget.

### Specification Support



**Specification downloads:**  
[www.bauder.co.uk/technical-centre](http://www.bauder.co.uk/technical-centre)



**Telephone helpline:**  
0845 271 8800



# BAUDERSOLAR

Risk free installation

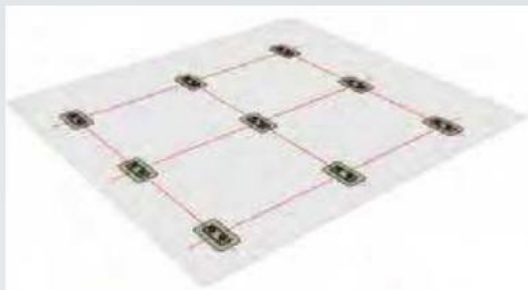
BauderSOLAR delivers a technically advanced solution through design of the mounting system and manufacture and efficiency of the PV modules.

The entire installation is designed to embrace our ethos that you should not and do not need to use penetrative fixings or heavy ballast loads to mount a PV array as this could compromise the integrity of the waterproofing and roof deck.



The distinctive element of our lightweight PV mounting system is the prefabricated Bauder membrane sleeves which slip over the mounting plates and are welded into position, anchoring the plates to the surface of the Bauder waterproofing system. Once this is completed, the rest of the PV installation is simply locked into place without any requirement for tools or sharp fixings.

The attachment of the mounting components is very stable so that even in extreme weather the entire array is secure on the roof. Any minor movement of the panels, which is generally created by wind uplift, is easily tolerated and does not affect the fixings, or waterproofing system.



#### 1. Positioning the Baseplates

The baseplates are plotted and measured out to ensure correct positioning according to the array design.



#### 2. Attaching to Roof Surface

The waterproofing membrane sleeves are placed over each of the baseplates and welded into position.

The large attachment footprint is very stable and the entire array is secure on the roof even in extreme weather.



#### 3. Installing the Mounting Units

The substructures are positioned over the mounting plates and locked into place.

The distance between the module rows is always 1450mm due to the fixed length of the substructures.



#### 4. Placement of the PV Modules

The PV modules are placed onto the substructure mounting system and mechanically secured using a tool free fixing method.

Finally the cable support system and electrical connections conclude the installation.



# PROJECT STUDIES

BauderSOLAR



UWE Enterprise Zone

BauderSOLAR  
SYSTEM



## BUILDING BOARD

Project:	<b>UWE Enterprise Zone</b>
Location:	<b>Bristol</b>
PV Roof Area:	<b>12,000m<sup>2</sup></b>
Client:	<b>University of the West of England</b>
Main Contractor:	<b>BAM Construction</b>
Specifier:	<b>Parsons Brinckerhoff</b>
Approved Contractor:	<b>Mitie Tilley Roofing</b>
PV Installer:	<b>Dulas</b>

## APPLIED PRODUCTS

- 1,713 BauderSOLAR PV modules were fitted generating at least 402 Megawatt Hours of solar power each year.

The University of the West of England (UWE) quadrupled its solar generating capacity through the installation of 1,731 solar panels, enabling it to produce over 400 MWh of electricity each year and making it the largest solar panel array in the UK university sector.

The solar array was installed on the roof of the University Enterprise Zone and the Bristol Robotics Laboratory, which both underwent extensive refurbishment as part of the required works. Prior to the PV being installed, approved contractor Mitie Tilley Roofing overlaid the original single ply waterproofing with over 12,000m<sup>2</sup> of Bauder's lightweight, robust PVC single ply waterproofing system Thermofol. The solar modules, which weigh less than 12Kg/m<sup>2</sup>, were then fitted using a unique penetration-free method by renewable energy specialists Dulas.

The PV system should generate enough electricity each year to; cover half of the energy usage within the building, save around 200 tonnes of carbon and provide annual savings of over £50,000 a year. The university is committed to sustainability and this project is just part of a much wider plan to achieve its carbon reduction goals.

*"The system we chose means the panels are welded into place, reducing load, and the need for roof penetrations and thereby risk of leaks. The University will use 100% of the power generated, equal to the amount of nearly 200 homes with solar panels. As a large organisation we want to set an example for others to undertake similar projects."*

**Fabia Jeddere-Fisher, Energy Engineer UWE**





Sheringham High School

Sheringham High School is a secondary school located in Norfolk that underwent significant refurbishment to repair a number of its failing roofs. The client wanted the school's campus to act as a benchmark for sustainability with the addition of solar panels.

Working closely with the surveyor PCH Associates, Bauder performed a comprehensive roof evaluation survey to identify the full extent of water ingress being experienced and to confirm the suitability of adding solar.

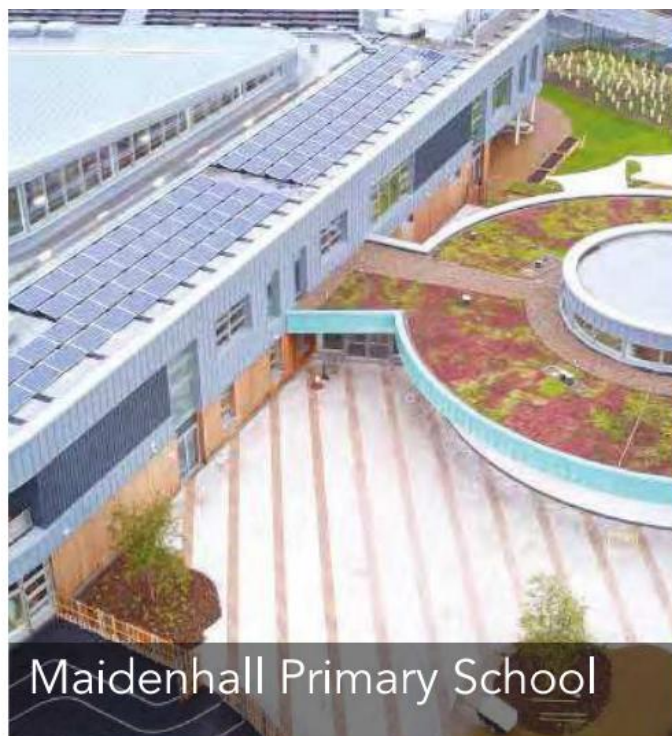
The school had 150 BauderSOLAR PV modules fitted by electrical Joju Solar. As a result the school will be able to generate at least 34.61 Megawatt Hours of power each year, all without any capital expenditure or any disruptions to the school term. Funding for the solar PV array was provided through a community share offer. The Schools' Energy Co-operative, ensuring both the school and the local community benefited financially from the solar installation whilst also providing clean renewable energy.

#### BUILDING BOARD

Project:	<b>Sheringham High School</b>
Location:	<b>Sheringham, Norfolk</b>
PV Roof Area:	<b>1,500m<sup>2</sup></b>
Surveyor:	<b>PCH Associates</b>
Approved Contractor:	<b>R T Roofing</b>
PV Installer:	<b>Joju Solar</b>
Fundraising Specialist:	<b>Energy4All</b>

#### APPLIED PRODUCTS

- Bauder Total Roof System with 35yrs BBA certified life expectancy.
- 150 BauderSOLAR PV modules were fitted, achieving a kilowatt peak of 39.00.



Maidenhill Primary School

The completely new Maidenhill Primary School on a fresh site in East Renfrewshire, near Glasgow was designed to create an educational space for pupils and staff that was secure, stimulating and suitable. Bauder helped them to achieve this by fulfilling roofs that incorporated seven different systems completed on time and on budget.

- Bauder single ply with PIR tapered insulation and acoustic insulation
- BauderSOLAR PV
- Bauder Total Roof System with vacuum insulation and PIR insulation
- Bauder Total Green Roof System
- Bauder XF301 Sedum System

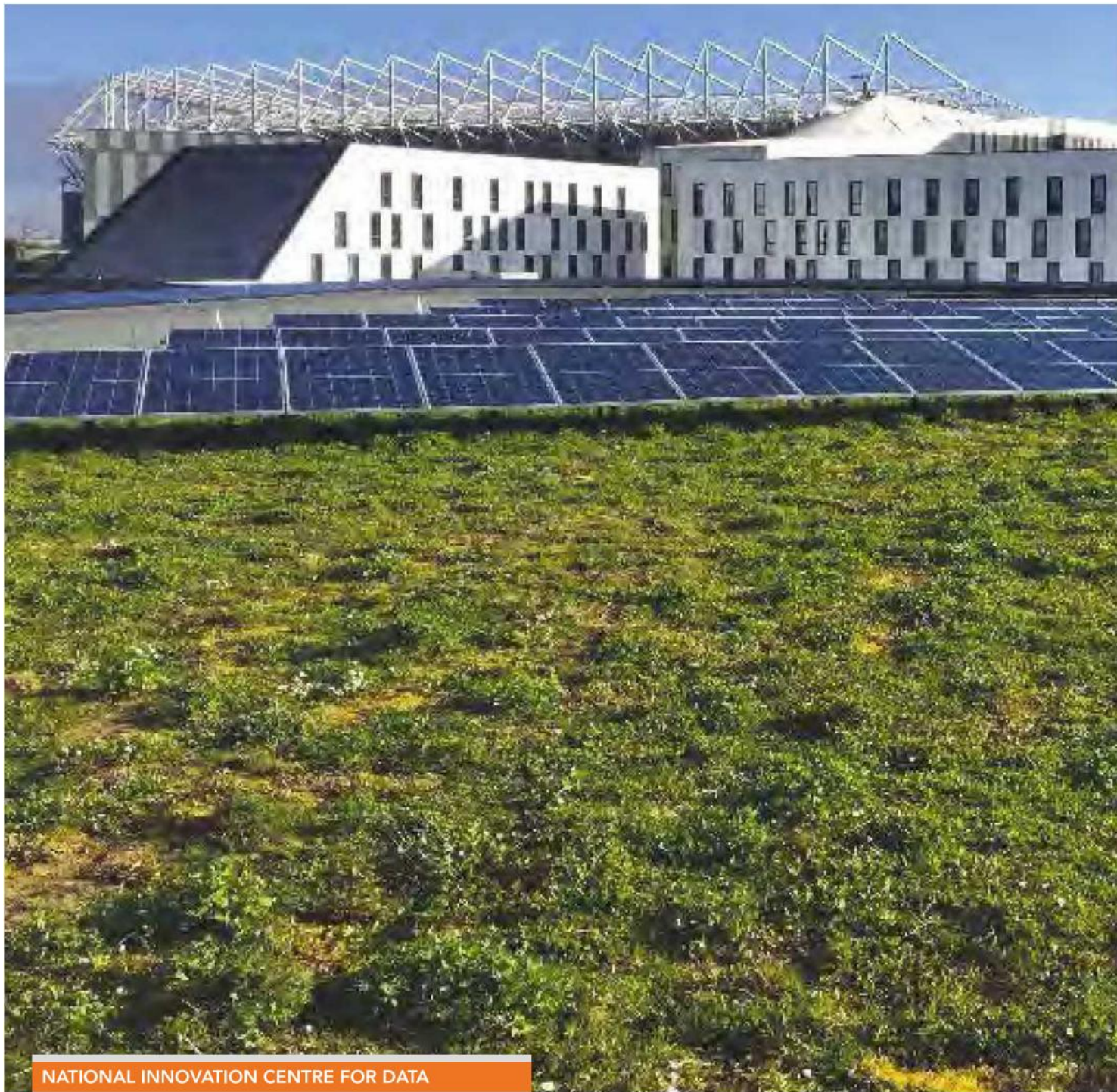
In total, almost 3,000m<sup>2</sup> of flat roof waterproofing systems, green roofs and solar PV were supplied by Bauder and installed by its Approved Contractor, Procladd Ltd so that a comprehensive guarantee could be issued encompassing products and workmanship to give complete peace of mind to the client for years to come.

#### BUILDING BOARD

Project:	<b>Maidenhill Primary School</b>
Location:	<b>Glasgow</b>
Client:	<b>BDP</b>
Main Contractor:	<b>BAM Construction</b>
Approved Contractor:	<b>Procladd Ltd</b>



# BAUDER BIOSOLAR FOR GREEN



## NATIONAL INNOVATION CENTRE FOR DATA

Location: **Newcastle upon Tyne**

*"Working with Bauder makes life so much easier because we can really tap into their expertise. The Bauder BioSOLAR PV system is a straightforward and quick system to install, incorporate that with Bauder excellent support team made the Newcastle NICAD installation was a dream to work on, and most importantly it looks great."*

**Andrew Connell, Project Manager, Energize Electrical Services Ltd**



# AND BLUE ROOFS

This flagship building in the city centre Helix Science site is topped with a high-tech roof combining solar PV with a biodiverse green roof and wildflower plants using our BioSOLAR solution. The 30.78kWp system, generates an estimated 26,140kWh per annum.

Our BioSOLAR is an integrated solution for mounting photovoltaic renewable energy on a green roof or a blue roof where the substrate and vegetation provide the ballasted installation mechanism to secure the array. The system is suitable for both new build construction and retrofit projects.

This system allows for the entire roof area to qualify as a green roof, and if a biodiversity vegetation finish is elected for, this can further enhance the BREEAM credit rating for the roof element.

## Key Features

- No roof penetrations as substrate and vegetation ballast the PV array.
- Maximises solar output and allows entire roof to qualify as biodiverse green roof.
- Maximises solar energy generation as green roof preserves ambient rooftop temperatures, keeping the modules at optimal output. The cooling effect increases panel output by up to 5%.
- Raised modules allow light and moisture under the panels and the creation of a variety of habitats supporting a greater range of plant species and small invertebrates.
- Single point responsibility for the waterproofing, green roof and PV installation.
- Increased module space between substrate and panels reduce risk of panel damage during green roof maintenance.

## Varied Habitats for Flora and Fauna

The panels create a mixture of sunny, shaded and sheltered areas and together with a variable depth of FLL compliant extensive substrate the roof gives a matrix of different habitats, which allow a broader range of plant species to thrive, and small invertebrates to seek refuge from strong wind and rain. Additionally undulations in substrate can be created to enrich the rooftop growing conditions for an even broader mix of flowering vegetation, providing a rich foraging environment for bees and insects. (See page 186 for vegetation options)

## Symbiotic Relationship

A key element of the BioSOLAR system is that the front edge of the PV panel is set at around 300mm above the level of the substrate, which allows liberal growing room for the extensive vegetation without blocking light to the crystalline solar cells that would otherwise reduce the efficiency of the modules. This height setting also enables light and moisture to reach beneath the panel to support the plants below and allows for maintenance of the green roof.

### Specification Support



Specification downloads:  
[www.bauder.co.uk/technical-centre](http://www.bauder.co.uk/technical-centre)



Telephone helpline:  
0845 271 8800



# BIOSOLAR

Safe guarded installation

## Optimising the Combined Technologies

In the Bauder BioSOLAR solution, the solar modules are raised above the substrate and angled at 10° to optimise the capacity for solar energy production and green roof area so that both can easily occupy the same space and work in synergy. In alternative systems the technologies compete against each other for roof space, with one conceding to the other.

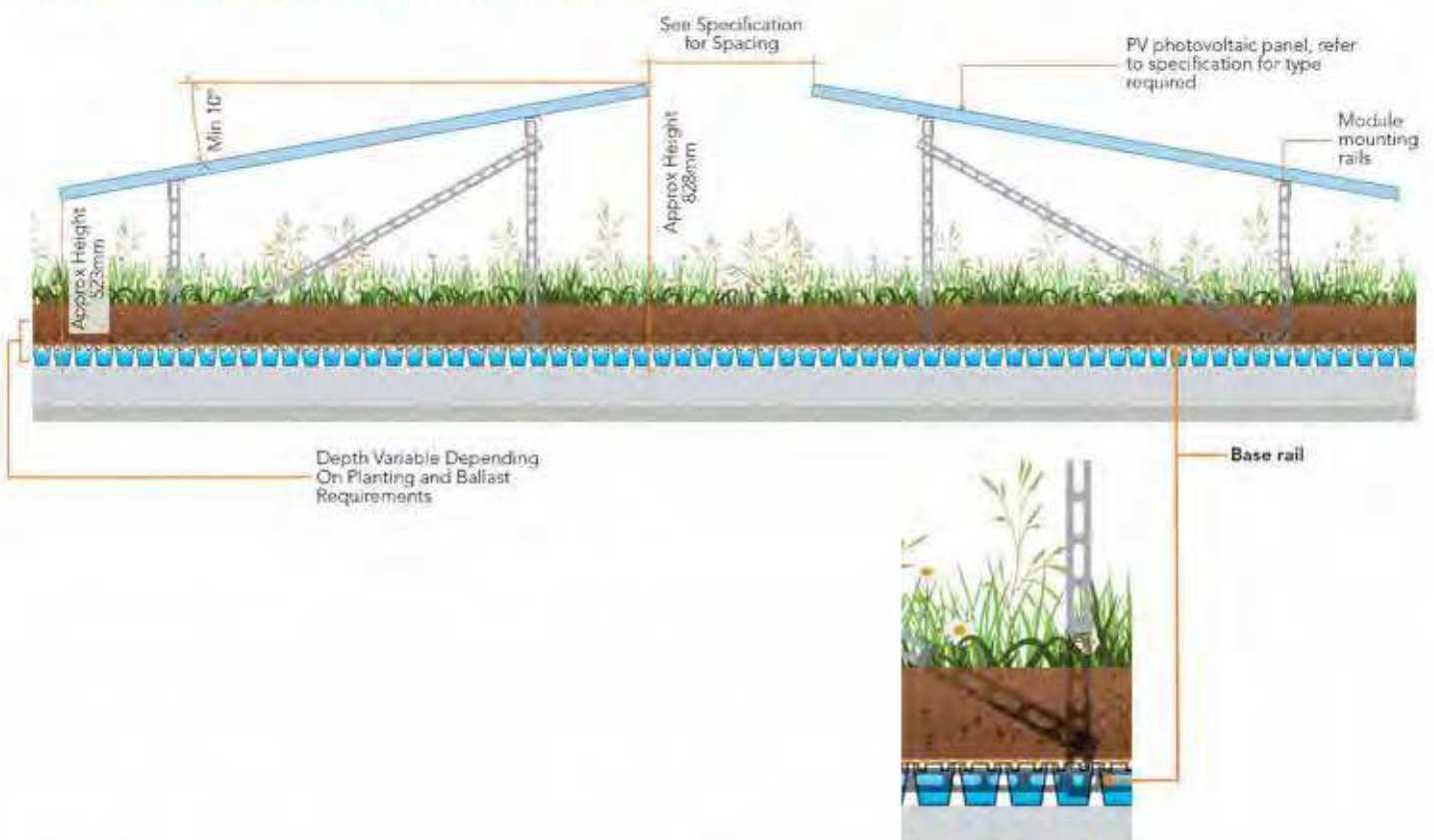
The PV panels are set at around 300mm above the level of substrate so that the growth of the vegetation does not reduce the efficiency of the panels through shading and allows for maintenance of the green roof. The height also lets sufficient levels of moisture and light infiltrate beneath the modules, supporting different species of plants and enhancing the biodiversity of the roof.

## Improved Solar Panel Efficiency

A combined green roof with PV delivers advantages to the building as the cooling effect of the vegetation and water held within the green roof system preserves a cooler ambient temperature around the photovoltaic array. Studies in Germany have shown that PVs work most efficiently with an ambient temperature of around 24°C and that when an array is combined with a green roof, the panels are expected to achieve around a 5-7% higher output compared to an installation on membrane alone.



## Bauder Biosolar Module Section - Cross Section





The mounting board is a bespoke moulded landscaping component manufactured from polypropylene with a deep recessed profile that provides water storage and multidirectional drainage whilst also providing a repository for the green roof substrate. A support profile is formed in the centre of the board to which the mounting arms are attached.

The boards are positioned on the top of separation and protection layers which prevent mechanical damage to the waterproofing.



### 1. Positioning the DSE40 Anchor Board and Attaching the Railing System

The DSE40 anchor boards are positioned according to the array design with any areas between the boards or around the perimeter finished using our DSE 40 board. The Coated Steel BioSolar mounting system is then fixed to base rails beneath the anchor boards.



### 2. Installing the Substrate

The substrate is poured into the mounting board to ballast the array.



### 3. Placement of the PV Modules

The PV panels are secured to the carrier rails with clamps.



### 4. Seeding the Vegetation

The Bauder Flora 3 seed mix is broadcast onto the pre-watered substrate so that the seeds can germinate and grow.

(See page 186 for vegetation options)



# PROJECT STUDY



Clapham Park



## BUILDING BOARD

Project:	<b>Clapham Park</b>
Location:	<b>Clapham Park, Lambeth, London</b>
PV Roof Area:	<b>500m<sup>2</sup> green roof layered with 116m<sup>2</sup> of PV</b>
Specifier:	<b>PJMA Architects</b>
Approved Contractor:	<b>EJ Roberts Ltd</b>
PV Installer:	<b>M &amp; M Electrical Ltd</b>

## APPLIED PRODUCTS

- Bauder Total Green Roof System is a premier bituminous waterproofing with a life expectancy of over 40 years.
- Bauder BioSOLAR integrates a green roof and photovoltaics into one system drawing the maximum potential from a flat roof.
- Flora 3 Seed Mix is a blend of 49 British native species seed, to maximise diversity of vegetation on green roofs.

The regeneration at Clapham Park involved the demolition of old housing stock to make way for new affordable homes. The 5-storey building with 21 dwellings incorporating the latest rooftop technology which blends a biodiverse green roof and unified solar PV array. This approach met the planning requirements and maximised the limited roof space to generate energy for the residents. The development was certified BREEAM 'Outstanding' due to its environmental, economic and social sustainability attributes.

One of the major challenges of the project was the roof and a renewable energy system to meet the main objectives of sustainability and energy efficiency of the development highlighted by the planning committee. The roof contributed towards requirements under National Planning Policy Framework (NPPF) Chapter 11: Conserving and enhancing the natural environment and The London Plan 2011 Policy 5.2 - Minimising Carbon Dioxide Emissions, Policy 5.3 - Sustainable Design and Construction and Policy 5.7 - Renewable Energy. The green roof is layered with a raised PV array so that the entire roof qualifies as a green roof whilst also providing energy generation.

The Bauder BioSOLAR system has National House Building Control (NHBC) approval and meets local authority building control (LABC) requirements. The system was installed on zero falls roof deck, making it a very cost-effective solution.

The biodiverse green roof which includes 35 plant species recognised by the RHS as Perfect for Pollinators, covers the totality of the roof area and offers a large variety of vegetation. The building reduces its carbon impact with the highly efficient PIR insulation and generates approximately 10% of the flats usage with a maximum possible output of 75kWp from the 70 PV modules. The solar PV mounting units are ballasted by the substrate and vegetation, removing the need for any penetrating products in the waterproofing.





### BioSOLAR Vegetation

The Bauder Flora 3 Seed Mix is a blend of seed, tackifier and additives developed to maximise diversity of vegetation on green roofs. Bauder Flora 3 has all the components required to improve the germination and the successful establishment of vegetation for a variety of rooftop conditions: light and shade; exposed and sheltered. The varied mix of species is designed to deliver the British native, biodiverse species required for BREEAM compliance.

Bauder Flora 3 contains a broad range of wildflowers chosen to give an extended flowering season providing nectar and pollen rich habitat for priority pollinators, larval food plants for butterflies and seed sources for birds.

Typically the mix will produce flowers from April to October starting with species Wild Strawberry and Cowslip, through the summer with Yarrow and Black Knapweed with Lady's Bedstraw flowering later into the autumn. The annuals, biennials and grasses will provide cover and colour in the first season allowing time for the slower growing perennials to establish in later years. The mix has been specified to be drought tolerant with sedum species and low growing perennials. Plants are chosen that do not exceed 40cm in height to avoid problems with shading of solar panels when the vegetation is used in conjunction with Bauder BioSOLAR. Shade tolerant ground cover plants were specified that will occupy semi-shade microclimates under the panels.

The seed source is British Provenance (with the exception of sedum species) and suppliers of the mix adopt the Flora Locale Code of Practice for collectors, growers and suppliers of native flora.



Flora 3 seed mix at point of sowing



Vegetation growth at 3 months



Vegetation established at 6 months





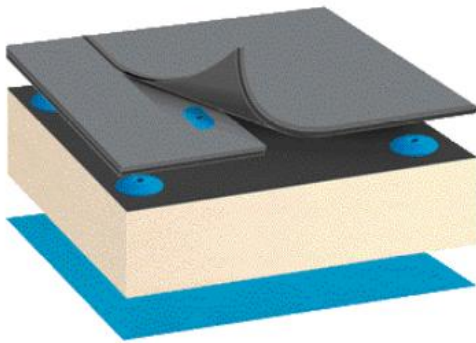
# WATERPROOFING OPTIONS

The Bauder portfolio of waterproofing systems ensures we impartially match the right solution for every project whether new build or refurbishment. These are our further options for roof covering systems to accompany a PV solution:

## Single Ply Systems

Our single ply roofing systems are ideal for lightweight, fast track and cost effective construction projects. The systems provide solutions that are durable, resistant to the natural elements and are able to support extensive green roofs.

- Projects: New build or refurbishment.
- Construction: Warm, cold and inverted roofs.
- PV System: Green roofs and BauderSOLAR flat roof.
- Certification: BBA, FM Approval.
- Guarantees: Full range to accompany the PV system.



## Bitumen Membrane Systems

Our long-established and fully integrated roof systems incorporate SBS modified elastomeric bitumen membranes and highly efficient PIR insulation to give a robust waterproofing solution with long-term durability and life-expectancy. These systems are ideal for all types of green roof scenarios and solar PV.

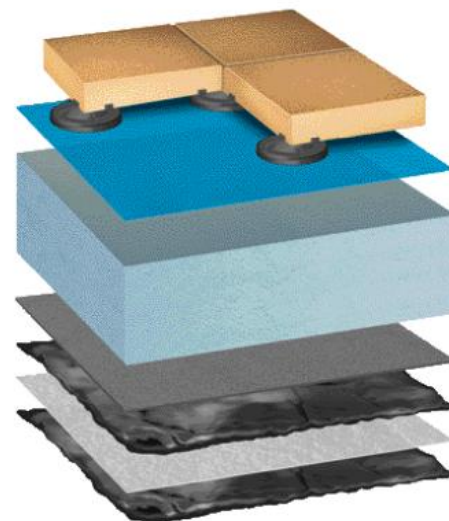
- Projects: New build or refurbishment.
- Construction: Warm, cold and inverted roofs.
- Upgrades: Green roofs and BauderSOLAR flat roof or BioSOLAR photovoltaics.
- Certification: BBA.
- Guarantees: Full range to accompany PV system installed.



## Hot Melt Structural Waterproofing

The Bauder Hot Melt Structural Waterproofing System can be installed on decks with zero degree falls.

- Projects: New build.
- Construction: Cold and inverted roofs.
- Upgrades: Green Roofs and BioSOLAR photovoltaics.
- Guarantees: Full range to accompany BioSOLAR PV system.





Our turnkey service supports you, is without charge, and follows these six simple steps



#### **1: Brief and Consultation**

You give us your remit either at your office or on site. We will discuss the roofing project, your budget and how the programme of works can be formulated to maximise benefits from your PV.

#### **2: Design and Specification Service**

You will receive the Bauder specification package for your project, which answers your brief and includes a technical layout of the PV units and system engineering.

#### **3: Grid Connections and Funding Options**

Our in depth understanding of energy efficiency funding can help you find the financial package that best suits your circumstances. We can help size the array for optimum return on investment based on electricity consumption data supplied.

#### **4: Contractor Selection**

Your Bauder technical manager will assist in the selection of appropriate contractors from a national network of MCS accredited contractors who are approved in the installation of Bauder's various roof and PV systems. Once the contractor has been appointed, a pre-contract meeting will make sure the project delivery is well coordinated. The works are closely monitored by Bauder site technicians with regular inspections to ensure quality and waterproof integrity of the final scheme.

#### **5. Sign Off and Guarantee**

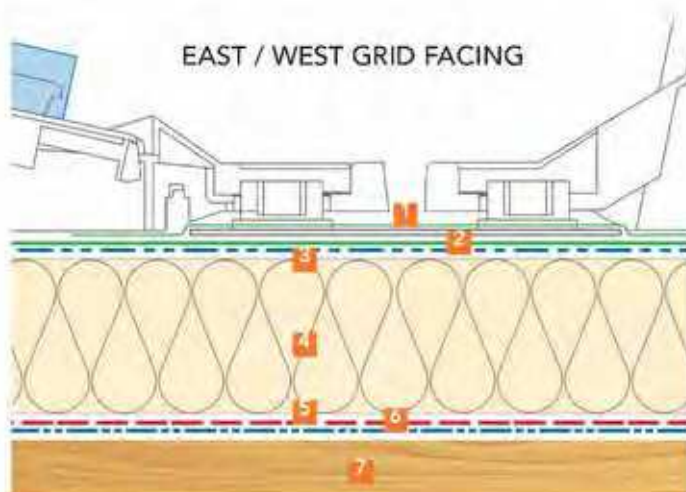
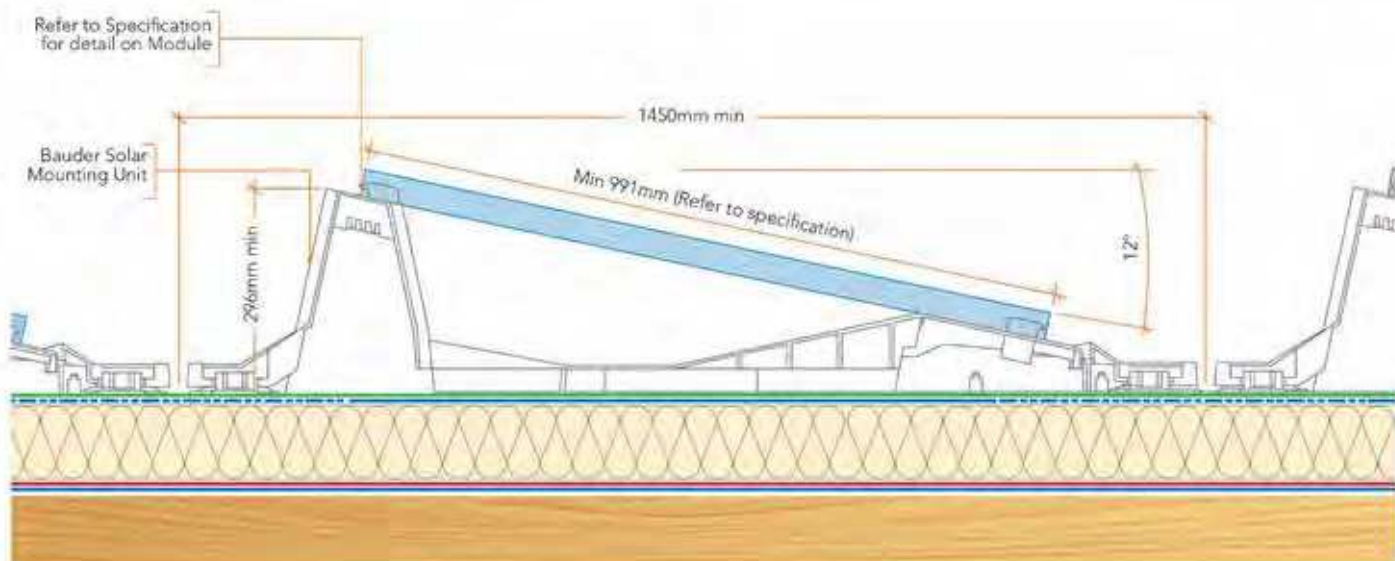
A full final inspection is undertaken by the Bauder PV team on completion of the works with the energy performance of the array assessed. Comprehensive guarantees for the roof and PV system are provided.

#### **6. Monitoring and Maintenance**

Proactive monitoring systems enable us to ensure the maximum possible energy generation and financial return over the system's lifespan, and to identify faults or maintenance requirements remotely. After the project has been successfully completed Bauder can continue to support you with aftercare advice and post occupancy evaluation.

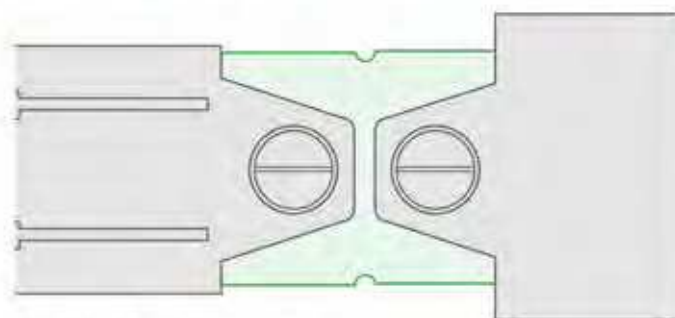
# GENERAL DETAILING

## BauderSOLAR



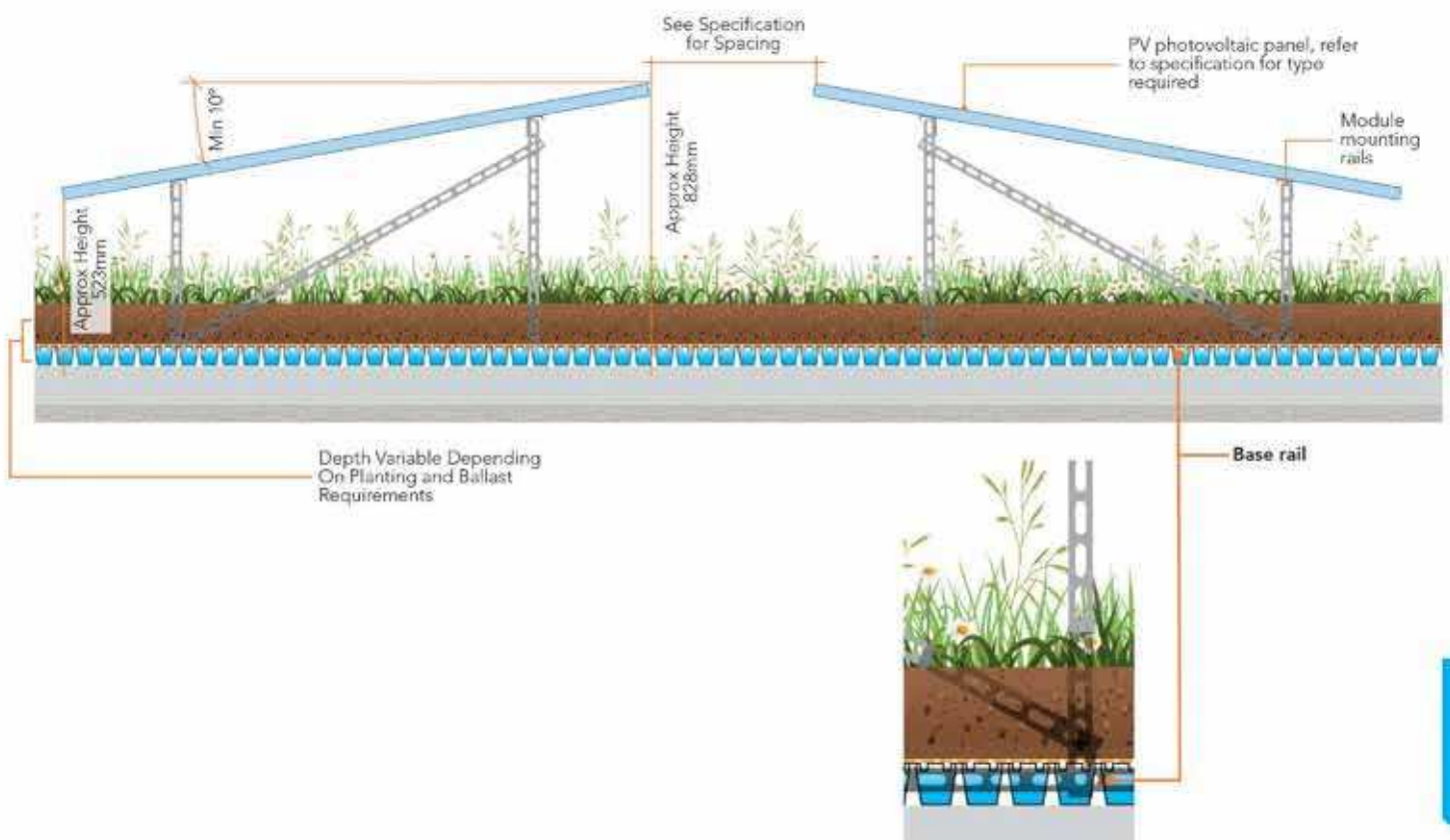
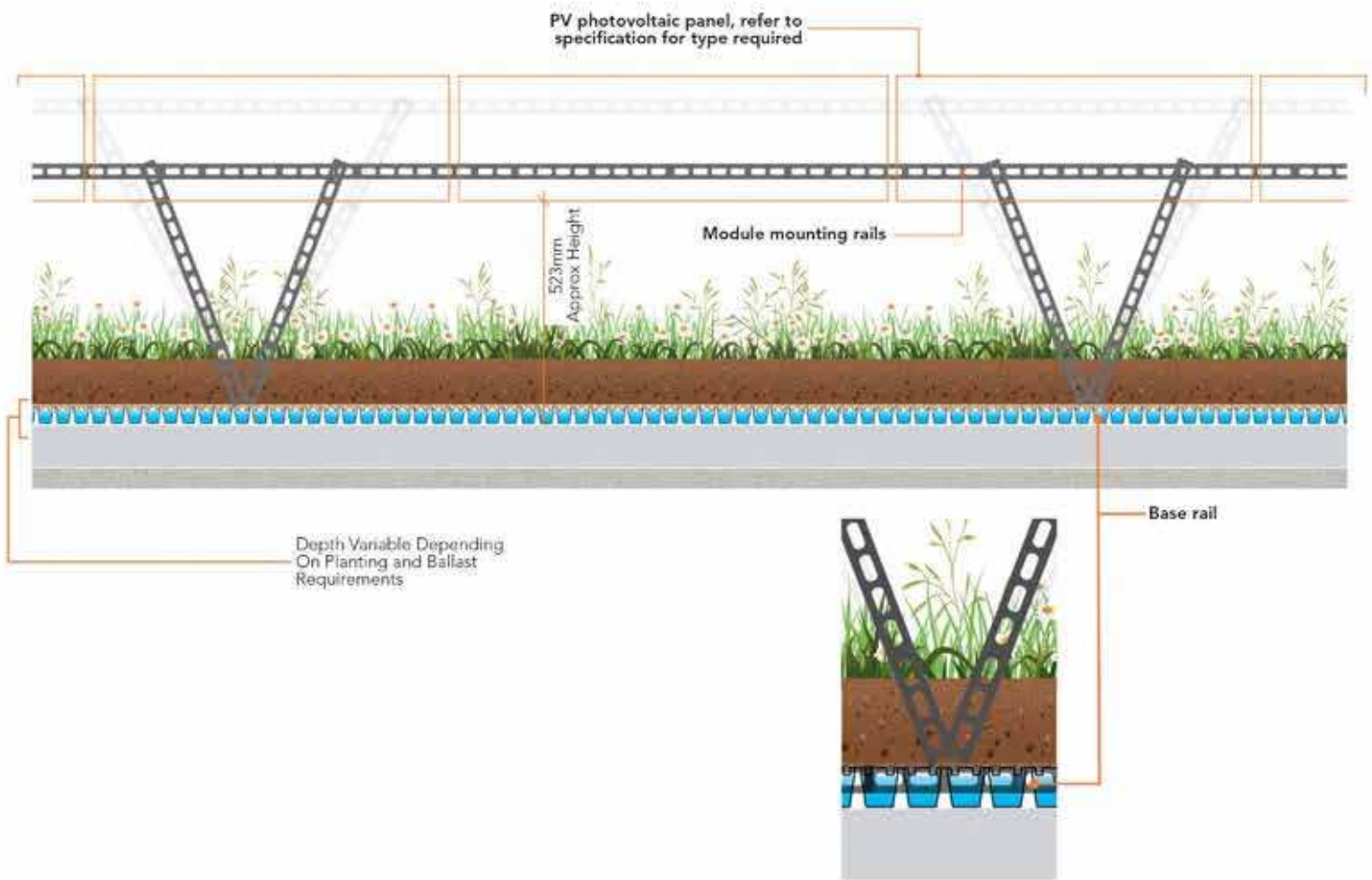
### Key

1. BauderSOLAR Membrane Sleeve
2. Bauder Cap Sheet
3. Bauder Underlayer
4. Bauder Insulation
5. Bauder Air and Vapour Control Layer
6. Bauder Random Nailed Layer used on timber boarded decks only
7. Unknown Deck/Substrate





## Bauder Biosolar Module Section - Cross Section





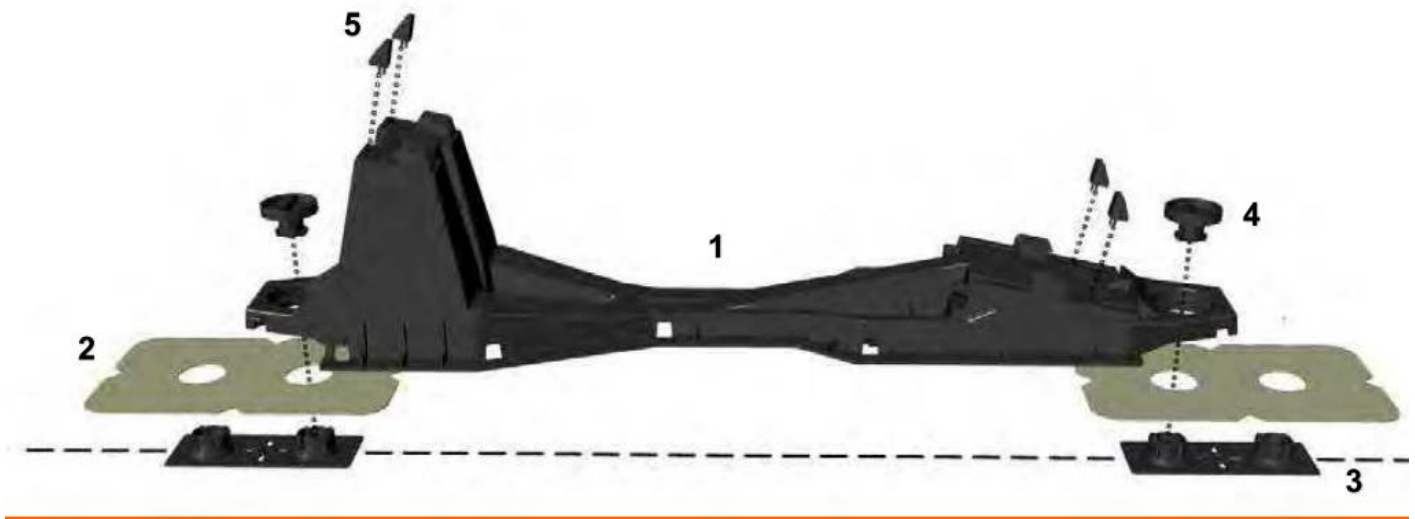
## PRODUCT DATA SHEET

### BauderSOLAR

BauderSOLAR is a flat roof PV mounting solution for framed solar modules. The mounting units are secured to the roof using a unique membrane-to-membrane welding technique. This installation method means that the roof is not compromised by penetrations for fixings, nor does it require ballast, which would add additional weight loading to the roof.

#### Intended Use

BauderSOLAR is specifically designed to be installed on specific Bauder bituminous or single ply waterproofing systems and provide a lightweight, low risk and quick to install mounting solution for framed solar modules manufactured by our module partners.















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[bauder.ie](http://bauder.ie)

## PRODUCT DATA SHEET

No.	Sketch	Name	Quantity	Description	Recycling
1		Main substructure	1 Pcs	<b>Substructure</b> with integrated module <b>clamps</b> (Polypropylene PP)	
2		Welding Sleeve	Subject to design	<b>Roof mounting</b> for welding to the roof (Bitumen, PVC or FPO roof membrane)	EWC number 170302 (bitumen) or 170203 (PVC)
3		Baseplate	Subject to design	<b>Receivers</b> for the bayonet twist lock fitting (Polyamide PA6-GF30)	
4		Bayonet Cap	2 Pcs	<b>Twist lock</b> for locking to the base plate (Polyamide PA6-GF30)	
5		Bayonet Safety Pin	2 Pcs	<b>Push fit pin to lock Bayonet Cap in place</b>	
6		Module Locking Pin	4 Pcs	<b>Module securing device</b> with two snap-in hooks below (Polypropylene PP)	
7		Separation layer	Subject to design	<b>Separation layer for PVC roof membranes only</b> 6mm thick, pre-cut to sit over the Bauder welding sleeve. (Recycled rubber granulate with an aluminium foil backing)	

### PRODUCT INFORMATION AND TECHNICAL PERFORMANCE

Characteristic	Test method	Unit	Value
Weight	EN 1848-1	kg/m <sup>2</sup>	9 to 12.5*

\* Includes weight of solar module, variable depending on module type and system layout.

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[bauder.ie](http://bauder.ie)

## PRODUCT DATA SHEET

### CERTIFICATION AND ENVIRONMENTAL INFORMATION

International Standards Organisation (ISO)	<p>ISO 9001:2015 Quality Management Certificates EN1271 (UK) and 70499/03-15_e (Germany).</p> <p>ISO 14001:2015 Environmental Management Certificates A10552 (UK) and 70499/03-15_d (Germany).</p> <p>ISO 50001: 2011 Energy Management Certificate 70499/03-15_c (Germany)</p>
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### INSTALLATION GUIDANCE

BauderSOLAR is designed to be installed by a Bauder approved and trained contractor only. Please see BauderSOLAR installation guidelines for a full breakdown of the system installation methodology.

The number of mounts and fixings required will vary from project to project. Please contact Bauder for a project specific technical report for further information. Windload and snowload calculations will also be provided on a project specific basis.

BauderSolar can be installed on slopes of up to 5° for bituminous membranes and 10° for single-ply membranes.

BauderSolar is intended to be used in combination with the following membranes:

- Bauder Total Roof System
- Bauderflex
- Bauder Thermofol – minimum 1.8mm mechanically fixed or adhered, all colours\*
- Bauder Thermofol Fleece Back – minimum 1.5mm mechanically fixed or adhered, all colours\*
- Bauder Thermoplan – minimum 1.5mm mechanically fixed, all colours

\*Please note that a separation layer is required for all Thermofol membranes, please contact our technical office for further information

Specific test standards and results are stated in Bauder product datasheets and our specification service should be used to confirm suitability to each individual project.

Bauder reserves the right to amend information and product specifications without prior notice. All reasonable care has been taken to ensure that all data is current at the time of print, however because Bauder pursues a policy of constant development we recommend ensuring that your copy of this information is current by contacting our Technical Department at [technical@bauder.co.uk](mailto:technical@bauder.co.uk)

Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications, installation techniques and any applicable laws and regulations.

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[bauder.ie](http://bauder.ie)





## Our Sustainable Practices



We are committed to reducing the impact our business and manufacturing operations have on society and the environment.

■ Managing Our Impacts	26
■ Proving Our Standards	27
■ Reduce, Reuse, Recycle, Reclaim	28
■ Saving Energy	30
■ Building for the Future	31

# MANAGING OUR IMPACTS

## Protecting the future

The Bauder group is totally committed to reducing the impact our business has on the environment. Our goal is to ensure we pass to future generations an intact ecological, social and economic company.

### Manufacturing

As a company, we aim to manufacture the highest quality flat roof systems, which offer the longest service life possible to provide lower whole life costs. By continually focusing on improving manufacturing processes for all of our products, we are able to further reduce raw material usage, waste, and emissions. For example, across our manufacturing factories we utilise shredders to recycle any membrane offcuts and waste back into production.

### Operation of Our Production Plants

Our manufacturing plants use closed rotation cooling systems which dramatically reduce water consumption and avoid environmental pollution.

Over a five-year period we have successfully reduced the energy consumption for the manufacture of PIR insulation by 20% and is a reflection of our ISO 50001 Energy Management accreditation. This is good for the business, good for clients and good for the environment.

### Packaging and Site Waste

On site, we work closely with recycling specialists to reduce rubbish going to landfill. The protective paper covers on our membranes are easily recycled, as are the plastic wrappings on the insulation board packs.

The offcuts of membrane during a roof installation are utilised at the detail flashings so that the amount of membrane required for a project is strictly calculated to reduce waste and costs.

As an example, on a large local authority refurbishment scheme we were instrumental in successfully achieving recycling targets by diverting and reducing the volume of waste to landfill by 90%.





# PROVING OUR STANDARDS

Recognised commitment to sustainability

As a company we work hard to ensure our systems and products meet the latest criteria and recognise the importance of assisting our customers, specifiers and contractors to achieve their sustainable targets by providing them with informative, honest data that enables them to make an informed choice when selecting our roofing systems.

## International Organisation for Standardisation (ISO)

The ISO develop and publish international standards that serve as a benchmark by which to evaluate companies, ensure the safety and quality of products and services, improve the environment in which we live in and facilitate business.

We have the following verified ISO certification:

- **ISO 9001:2015 Quality Management Certificate**  
EN1271 (UK) and 70499/03-15\_e (Germany).  
and FM 86932 for Holt Melt manufacturer.
- **ISO 14001:2015 Environmental Management Certificate** A10552 (UK) and 70499/03-15\_d (Germany).
- **ISO 50001: 2011 Energy Management Certificate**  
70499/03-15\_c (Germany).



## Environmental Product Declaration (EPD)

This certification is based on ISO 14025 and EN 15804 and is a global programme for verifying and registering comparable information about the life-cycle environmental impact of a product.

The Eco Platform accreditation is recognised by the BRE as valid and transferrable environmental documentation towards obtaining BREEAM credits for BREEAM UK New Construction 2018.

We have EPD certificates covering:

- **Bitumen Membranes**  
S-P-00414
- **Thermofol PVC Membranes**  
EPD-BAU-20130188-IBCC-EN
- **Thermoplan FPO Membranes**  
EPD-BAU-20130189-IBCC-EN
- **LiquiTEC Products**  
EPD-DBC-20130101-IBE1-EN
- **PU Insulation - Mineral Fleece Facing**  
EPD-IVP-20140206-IBE1-EN
- **PU Insulation - Aluminium Facing**  
EPD-IVP-20140207-IBE1-EN



## Green Roof Benchmarks

We are a founder member of the Green Roof Organisation (GRO). The GRO Guidelines, which refer back to the original German association The Landscaping and Landscape Development Research Society e.V. (FLL), recommends levels of performance, longevity of components and technical design criteria.

Our membership of the International Green Roof Association (IGRA) sees us supporting and promoting ecological green roofs in the UK and Ireland through the exchange of ideas and technologies.



## Royal Horticultural Society (RHS) – Perfect for Pollinators and Flora Locale

The United Kingdom's wild bees and other pollinators are considered to be in decline. By planting nectar and pollen rich flowers over a long season, this trend can be reduced. The plant varieties within our Flora Seed Mixes for substrate green roofs have been specially selected and blended to give a high diversity of wildflowers included in the RHS Perfect for Pollinators list to provide a rich habitat for priority pollinators, larval food plants for butterflies and seed sources for birds.

## Flora Locale

In addition to our seed mixes being perfect for pollinators, the mixes and wildflower blankets have native British provenance for perennial wildflowers, annuals and grasses to meet BREEAM and Biodiversity Action Plan (BAP) requirements.

## Buglife

Buglife is the only organisation in Europe devoted to the conservation of all invertebrates. We work with Buglife to advance biodiversity standards on green roofs through the development of design criteria for biodiverse green roofs. Our systems are the only roofs endorsed by Buglife.



# REDUCE, REUSE, RECYCLE, RECLAIM

Using recycle in the manufacture of our products

## Recycled Content in Our Products

Working closely with our suppliers and using data from extensive research, we have steadily increased the recycled content of many of our products without detrimental effect on their durability, performance or longevity of service. Our principles are to focus on life cycle and deliver systems with extended life expectancies rather than compromising on quality by producing lower grade membranes that would consequently require replacement sooner.

## Bitumen Membrane Waterproofing

Our manufacturing processes include returning any offcut waste back into production so that bituminous waste is kept to a minimum.

The reinforcement fleece within our bitumen membrane and cap sheets is made from 250g/m<sup>2</sup> recycled spunbond polyester for high tensile strength.

## Single Ply Waterproofing

Currently, the production of our single ply membranes includes recycle to the base layer.

## Hot Melt Waterproofing

This system has recycled content incorporating post-consumer recycled rubber.

## Green Roof Build Up Components

Many recycled or waste materials are used within our green roof components to enable us to provide environmental solutions to the industry.

**Water Retention and Drainage Layers** - Our DSE 20, 40 and 60 boards all utilise 100% recycled high density polyethylene moulded to create the cupped profile boards that provide water retention and multi-directional drainage.

**Our Attenuation Cell 100 board** is manufactured from recycled PolyPropylene.

**Protection Layers** - Our FSM 600 and 1100 are made from a mixture of recycled reground polyester and polypropylene fibre, which are combined before being mechanically and thermally solidified to create a layer to prevent mechanical damage to the waterproofing.

**ProMat** for intensive green roofs is made of granulate from recycled shredded tyres reformed and bound by Polyurethane to give a protective layer against mechanical damage.

**Ecomat** is a protective layer created from recycled Polyester clothing and fabric.

**Substrates and Growing Mediums** - Our substrates are based around recycled crushed brick and composted organic material to give growing mediums which balance water storage, structural stability, water permeability and grain size distribution according to the requirements of the planting scheme

**Separation and Slip Layer** - PE Foil is manufactured from recycled polyethylene granulate.





## End-of-Life, Recycling and Upcycling of Our Products

### Single Ply Membranes

FPO membrane offcuts can be recycled by returning them to the manufacturing process to be used instead of raw materials. If, however, the membranes have become contaminated by external agents during their serviceable life, then the membranes can be downcycled into other products.

When PVC membranes are upcycled, they can be processed and reintroduced into a manufacturing stream where they are typically converted into other components such as walkway membrane and protection or separation layers for roof systems.

### Bitumen Membranes

Recycling end of life bitumen membranes from a roof is a real challenge for all manufacturers because the membranes are made up of different constituents that together create a mixed waste which is currently non-recyclable.

Though energy can be generated through incineration of bitumen membranes at end of life, though the availability of suitable facilities is limited.

Our approach is to overlay an existing roof wherever possible so that the existing system doesn't have to go to landfill. Our moisture mapping technical diagnostic test, pinpoints the presence of dampness within the roof structure to depths of 300mm and is currently the only reliable way to test underlying sections of multiple layer roof systems for trapped water.

The results are delivered as a topographical map which can be analysed to identify precisely which areas of a roof need replacing and which areas are sound enough to install another solution over the top.

### Hot Melt Life Cycle

The durability of hot melt waterproofing is such that there is no need to replace the product during the roof's expected life, giving excellent life-cycle costings.



### Insulation

Bauder is active within the PU Europe organisation which is the voice of the polyurethane insulation industry contributing to the political and technical decisions in areas such as energy efficiency, sustainable construction, and health and environment.

Alliances with other forward thinking companies has resulted in innovative recycling opportunities, so that our PIR insulation manufacturing facilities readily recycle and upcycle offcuts and fragments for use in hand cleaners as well as for the manufacture of decking boards.

The expanded polystyrene (EPS) scrap from the manufacturing process is reintroduced back into making our EPS insulation boards to keep waste to a minimum. When it is not used to make more EPS, foam scrap can be turned into a variety of products such as clothes hangers, park benches, flower pots, toys, rulers and seedling containers.

### Green Roof Components

Our green roof components are themselves made from recycled content and at the end of their life, they too can be returned to their originating recycling process to be converted again into other products and components.

To give an example, our water retention and drainage layers DSE20, DSE40, DSE60 and Attenuation Cell 100 are made from recycled high density polyethylene (HDPE), a plastic polymer with flexible properties, that continues to be commonly recycled or downcycled into other durable plastic products.

### Photovoltaic Panels and Components

In Europe, solar panel disposal falls under the European Union's Waste of Electrical and Electronic Equipment (WEEE) directive and is strictly regulated. Our module supply partners are all members of PV Cycle framework which is a not-for-profit association managing a fully operational collection and recycling scheme for end-of-life photovoltaic modules. [www.pvcycle.org](http://www.pvcycle.org)

### BauderSOLAR

The individual components of the BauderSOLAR flat roof system are single-origin and can be individually removed and completely recycled. The main support structure and locking pin are made from plastic category 05 Polypropylene and is widely recycled; with the base plate, bayonet fitting and module clamp all from plastic category 07 Polyamide which is recycled into plastic timber and other custom-made products.

### Bauder BioSOLAR

The mounting boards for the BioSOLAR system that provides the water retention and drainage layer for the vegetation beneath the array are made from HDPE which is widely recycled.

The support system for the Bauder BioSOLAR system is made from aluminium; the arms, support rails and clamps can be recycled by melting down and reforming the metal without losing quality.

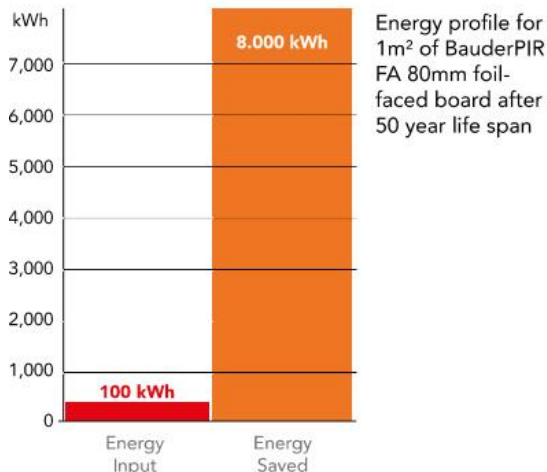


# SAVING ENERGY

Reducing the environmental impact of a building

## Effective Roof Insulation

It has long been recognised that the insulation of a building is essential to improve thermal performance and reduce the carbon emissions associated with heating buildings, in addition this improves quality of life and increases productivity through better working conditions.



The embodied energy of our rigid polyurethane PIR insulation accounts for as little as 4% of the energy the board can save during its serviceable life. With buildings accounting for 50% of the energy consumption in Europe, the inclusion of insulation when installing new or refurbished roofs plays a significant part in reducing CO<sub>2</sub> emissions.

## Designing Insulation Schemes

Effective and efficient use of insulation boards on a roof is a consideration so that resource efficiency is maximised and site waste minimised. At Bauder, it is our aim to design out misuse arising from a scheme layout, though the success of this can depend more on the way the building is designed rather than the way the product is used. This is particularly important when tapered insulation schemes are required where boards are precisely positioned and less transposable.

## Upgrading Insulation on Current Roofs

By utilising moisture mapping and other sophisticated diagnostics and software, we are able to offer a refurbishment service that identifies precisely where on a current roof the insulation is perfectly sound and efficient and therefore does not need replacing, and the areas suffering from water ingress which need to be removed as the insulation is ineffectual. This provision proactively analyses the exact project requirements, rather than working with assumptions, to reduce the materials required for refurbishing the roof and keeping costs to the building owner at a minimum.

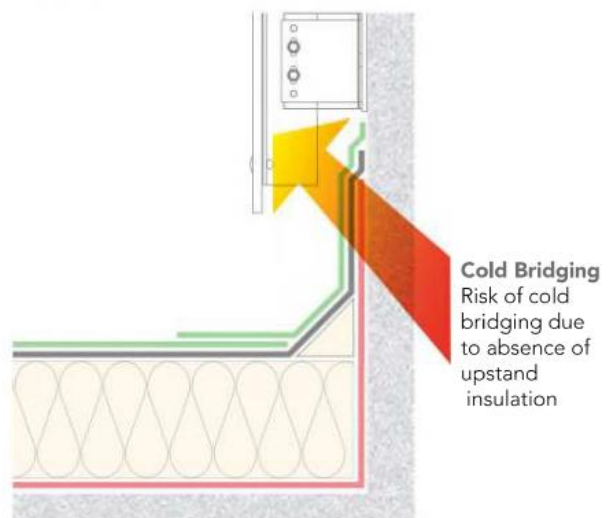
## Building Research Establishment (BRE) Study on Roof Design and Detailing

The BRE has researched energy loss through air leakage and cold bridging at penetrations and junctions on roofs and estimates that 30% plus of all energy loss in a building occurs at these points.

## Cold Bridging

A cold bridge, also called a thermal bridge, is an area of a building construction, which has a significantly higher heat transfer than the surrounding materials resulting in additional heat loss. This is typically where there is either a break in the insulation, less insulation or when the insulation is penetrated by an element with a higher thermal conductivity.

To eliminate cold bridging on a flat roof, our detail design focuses on identifying areas where heat transfer, and hence adverse heat loss, could occur. On warm roofs, upstands and parapets are insulated to a minimum height of 300mm above the deck. Additionally, our portfolio of accessories allows us to recommend and specify insulated outlets and soil vent pipes as well as using thermally broken fasteners in our mechanically fixed waterproofing systems.



## Air Leakage

Uncontrolled infiltration of air is generally considered undesirable, except for ventilation purposes, as it reduces the thermal efficiency of a building and therefore generally increases energy consumption. For all buildings, infiltration can be reduced via sealing cracks in a building's envelope, and for new construction or major renovations, by installing continuous air retarders.

To counteract air leakage, our roofs are detailed and installed to minimise air permeability, and therefore heat loss, by ensuring the correct sealing of membranes to all rooftop details.



# BUILDING FOR THE FUTURE

Sustainable solutions for successful planning

## Meeting Planning, the Merton Rule and Delivering Low or Zero Carbon (LZC) Technologies

The Merton Rule was a pioneering planning policy, developed by Merton Council, which at the time asked new commercial developments over 1000m<sup>2</sup> to generate at least 10% of their energy needs from site sourced renewable energy, in order to help reduce annual carbon dioxide (CO<sub>2</sub>) emissions in the built environment. Merton Council established the rule and adopted it in 2003.

In 2008, the Government published its central planning guidance Planning Policy Statement – Planning and Climate Change – PPS1 that requires all UK local planning authorities to adopt a 'Merton Rule' policy and more specifically within PPS22 – Renewable Energy which planning authorities should have regard to when preparing local development documents and when taking planning decisions.

To date, the vast majority of councils have embraced the Merton Rule adopting pro-renewables planning policies within Unitary Development Plans (UDP) or Supplementary Planning Documents.

In Scotland, the Government has set clear targets for renewable electricity with the First Minister wanting renewable sources to generate the equivalent of 100% of Scotland's gross annual electricity consumption by 2020.

In addition to these planning resolutions, BREEAM requirements for buildings often call for site sourced renewables with a minimum of 30% CO<sub>2</sub> reduction from site based renewables required to achieve maximum credits.

With this background, all building designers, constructors and developers need to consider the options for on-site renewable energy and satisfying these obligations is frequently a driver for including a photovoltaic array on a roof. A flat roof being the ideal location for unobtrusive energy generation.

Our Solar PV solutions deliver these obligations on flat roofs without any penetrations of the waterproofing system to safeguard the integrity of the building. See chapter 10 for more detailed information.

## Uniting the Challenges

The real challenge arises when a planning prerequisite is placed on urban development to combine both a green roof and a renewable energy system and how to locate both within the same, and often size limited, roof area. A feasible solution is to layer the green roof and PV array with our BioSOLAR solution which means the systems can co-habit the same area where they mutually benefit each other. The advantage of this solution is that the entire roof area qualifies as a green roof, and if a biodiversity vegetation finish is chosen, this can further enhance the BREEAM credit rating for the roof element.

The distinctiveness of the system is in the design of the mounting system whereby the substrate and vegetation provide the ballasted installation mechanism to secure the array to the roof.

## Synergy

The BioSOLAR system also has the advantage of increasing the efficiency of the solar array because the vegetation preserves ambient rooftop temperatures, keeping the PV modules at optimal output and increasing energy yields by 5% - 7%.









# CREATIVE CRIEFF

## LEADENFLOWER - CINEMA AND COMMUNITY RADIO HUB

DESIGN AND ACCESS STATEMENT (JULY 2022)

FERGUS PURDIE ARCHITECT





INTRODUCTION

This report provides supporting information for the proposed demolition of the former Crieff Hotel, East High Street, Crieff and replacement building for a new cinema and community radio hub. The statutory planning approach and process for the project is ongoing and has been progressed incrementally. Beginning with applications (ref 21/01849/FLL and 21/01850/CON) for the proposed demolition of the existing buildings on site and introduction of a ‘Stalled Space’ as a holding proposal whilst the design for the replacement building was completed.

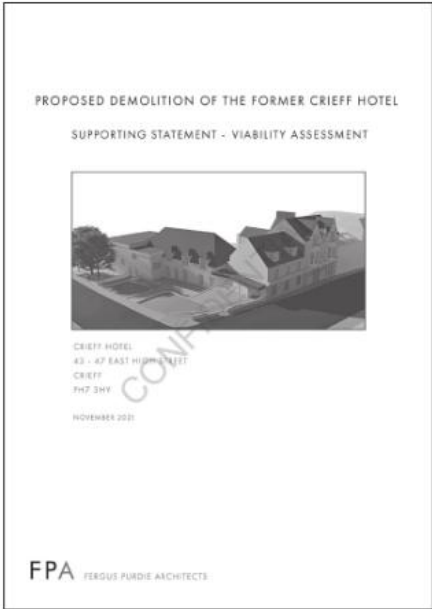
The status of the proposed demolition application and ‘Stalled Space’ reached a point where Historic Environment Scotland (HES) requested more detailed information on the viability of retaining and repurposing some of the existing buildings. Whilst preparing a formal response to the HES feedback the decision was taken by Creative Crieff to progress concept design proposals for the new replacement building. The outcome of this briefing and design development process is a detailed proposal for the replacement building and associated public realm works, as presented in this planning application.



Existing Buildings



Location Plan



Current Planning Applications - Proposed demolition and stalled space





## BACKGROUND AND VISION

Creative Crieff is a charity whose objectives include urban development, but its core activity is the use of film, media and arts to improve the communities in which we live. It is an active participant in the Crieff Community Action plan 2021-2026 and as such provides a complimentary and supporting role to enable and deliver a range of projects by likeminded community groups. Local groups tasked to take forward a series of independent projects that have a synergy to collectively respond to Crieff's community lead regeneration aspirations with viable and sustainable proposals for change. The Leadenflower project will make a significant contribution to this vision.

As part of Creative Crieff's progressive approach to delivering real world outcomes it began its journey by initiating and operating a community radio station, Radio Earn, which since its launch in June 2021 has welcomed 5,500 listeners and growing. BBC Scotland's news programme, The Nine, has 2,500 viewers. A remarkable result in such a short term of existence. Whilst Creative Crieff continues providing support for Radio Earn it also intends to take forward the next phase of its delivery programme – Leadenflower Cinema and Community Radio Hub.

Having considered various sites including The Drummond Arms and Penny Lane, both locations are now the subject of other community group initiatives, the former Crieff Hotel was selected as the preferred option suitable for taking the project the project. Despite the potential difficulties and challenges for developing the site Creative Crieff chose this location for the following reasons:

- Highly visible entry 'Gateway' location at the top of the High Street
- Proximity to public car parks to support the operation of the venue
- Provide an 'anchor building' to encourage and promote regeneration of the area
- Large footprint to accommodate entire proposed development
- Good accessibility to surrounding town centre and beyond
- Unlisted, derelict property



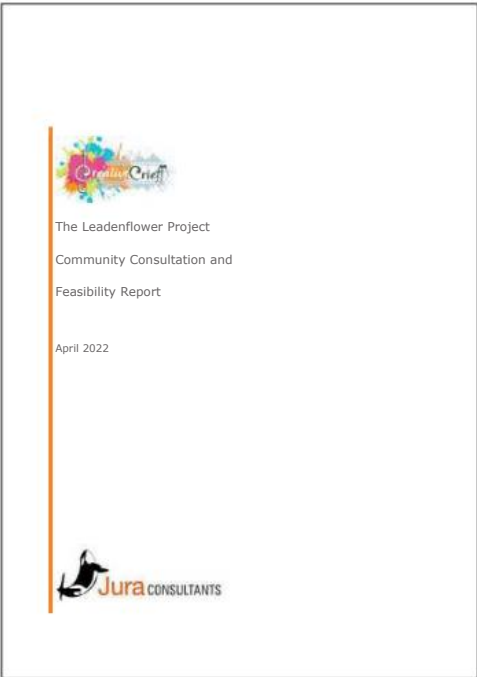
High Street Initiative

In addition to the process of site selection Creative Crieff commissioned Jura Consulting to carry out a community consultation and feasibility assessment for the proposals. This researched, examined and established a robust business case for the cinema provision and evidenced the need and viability of the proposals.

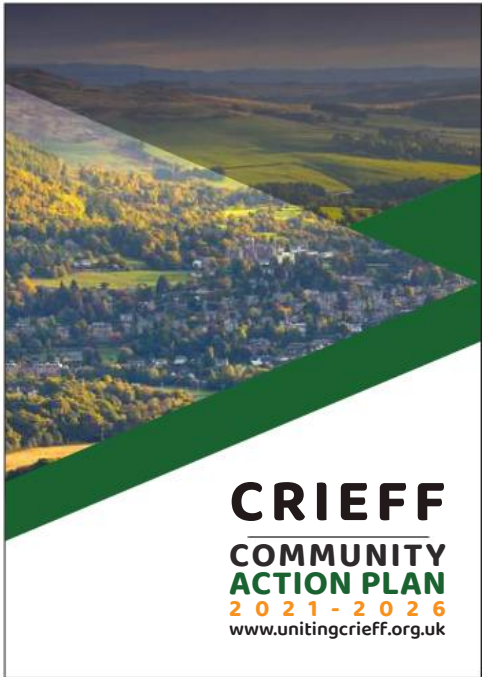
Jura Consulting – *'This survey provided specific feedback from the community on a Crieff cinema. The respondents to the survey were overall very positive about a cinema in Crieff. The majority enjoy going to the cinema and tend to visit around 3-4 times a year. The cinema would have to have the latest releases, a varied programme and be comfortable to attract the respondents to use the cinema. Most of the respondents were willing to replace all their current cinema going with the Crieff Cinema if it provided these features.'*

Creative Crieff - *'Our feasibility study has established a cinema would be well supported and financially viable in Crieff. It also established the demand is for Big screen; Big sound; Big films; Big seats – a luxury offering'.*

The project is a pro-active response to Creative Crieff's vision to make positive change, develop skills and connect with the needs and well-being of the local community.



Background Information



DESIGN APPROACH AND PRINCIPLES

The Brief - the core objectives of the business case and strategic brief will deliver a broad range of economic, social and regenerative outcomes. This has translated into a programme of requirements including the following key areas, all fully aligned to the business case – 2no cinema’s, bistro and bookshop, internal gathering areas, community radio facilities for Radio Earn and a range of public realm spaces.

This is very much a live project as Radio Earn established temporary occupation of a nearby High Street premises. This local radio service has achieved great success since its launch in June 2021 with continued community support and engagement from Crieff and Strathearn, Perth and Kinross Council and others. The intention is for Creative Crieff and Radio Earn to continue this success within the new proposals as a purpose built, state of the art community radio hub. Thereby continuing a community activity complimentary to the cinema provision and other fully accessible public spaces for use by locals and visitors alike.

Townscape – the property is unlisted and unreferenced in the Conservation Area Appraisal. A section of the East High Street elevation whilst offering some limited heritage value would be impracticable and unviable to restore, reuse or repurpose. As the building ‘turns the corner’ to Leadenflower Street and beyond the remaining elevations presents a series of altered and extended forms, incongruent and of poor quality. Buildings that compromise the character of the conservation area. The surrounding external car parking and residual hard standing or gravelled terraces provide no opportunity for encouraging streetscape activities or complimentary landscaping, resulting in poor quality public realm spaces that have a negative impact on the visual quality of the area.

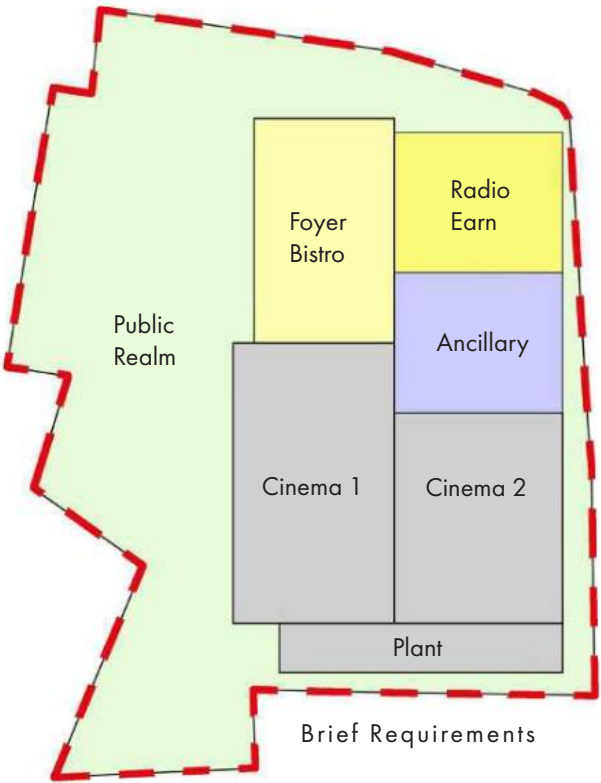
Development Compatibility of Existing Property - the former Crieff Hotel consists of a range of domestic size cellular accommodation with public rooms developed over decades of change with ad hoc interventions and alterations. The resulting configuration is incompatible with the development capacity required for the new proposals: the overall form, scale and layout of the existing property cannot provide the spatial or services requirements for the proposed new long-term use as a cinema project. In addition, the building structure and fabric conditions will not achieve the technical outcomes or performance criteria necessary for a state-of-the-art facility.



East High Street



East High Street





DESIGN APPROACH AND PRINCIPLES

Concept Design - the replacement building will provide a new purpose-built facility with adjacent external public spaces. Landscaping combining terraces and garden will provide a mix of open and sheltered external spaces fully accessible all year round. The project will re- introduce a cultural activity, Crieff previously have a cinema, that will not only serve the local area of Strathearn but also bring a much need economic development to the High Street for visitors and tourists.

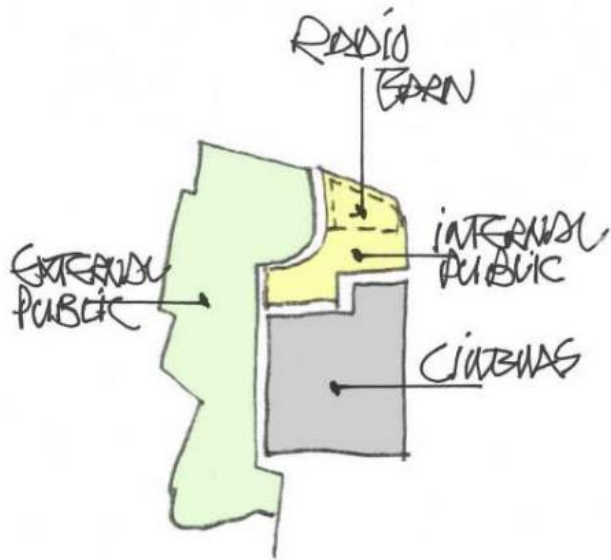
The proposed plan layout and relationship of the various uses and range of spatial requirement have been configured in response to existing site conditions and constraints, for example use of the existing topography (significant slope and level changes) to achieve a 'good fit'. To achieve this aim the cinemas are located at the lower section of the site where larger volumetric spaces can be accommodated.

- The concept design has four distinctive elements –
- external public spaces in the form of a courtyard and wild garden
  - internal public spaces for eating, drinking and gathering
  - cinemas (dark rooms) and performance spaces
  - community radio hub

The design strategy adopted for the project combines all the above elements by placing them within the site, and in relationship to each other to achieve desired spatial outcomes whilst reconciling respective functional aims and objectives. – form, scale, materials, uses, sustainability and ecology.

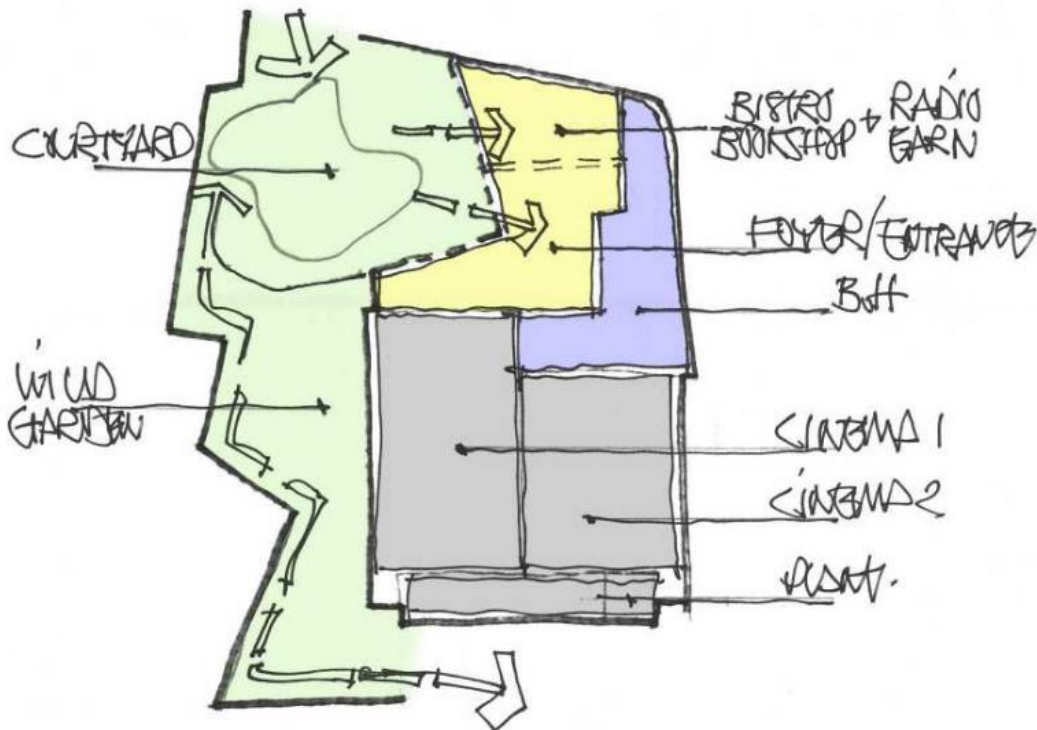
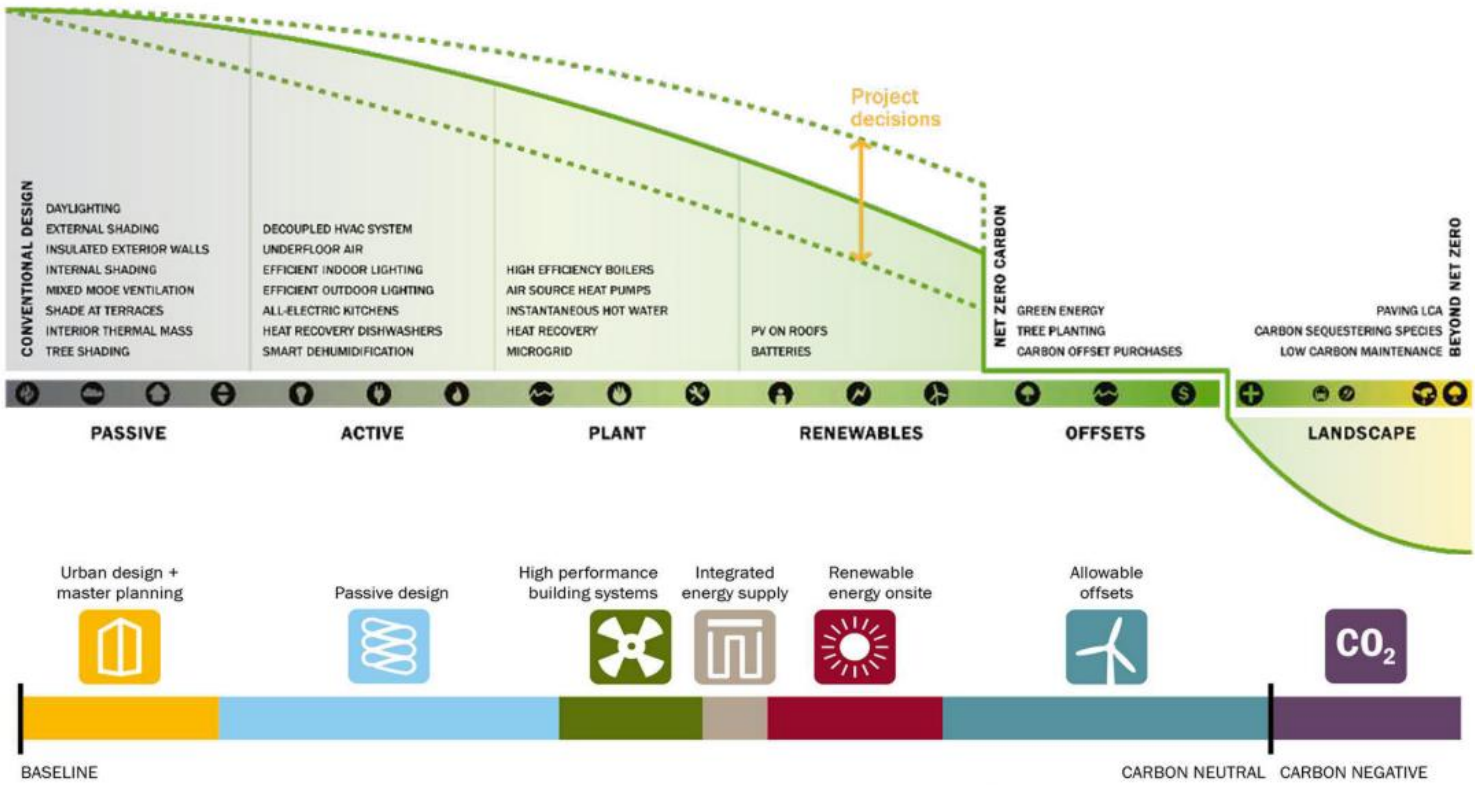
The outcome is a concept design combining a collection of clearly defined spaces that range in character and atmosphere.

- open - closed
- light - dark
- large - small
- inside - outside
- nature - crafted



Concept - Principle Elements

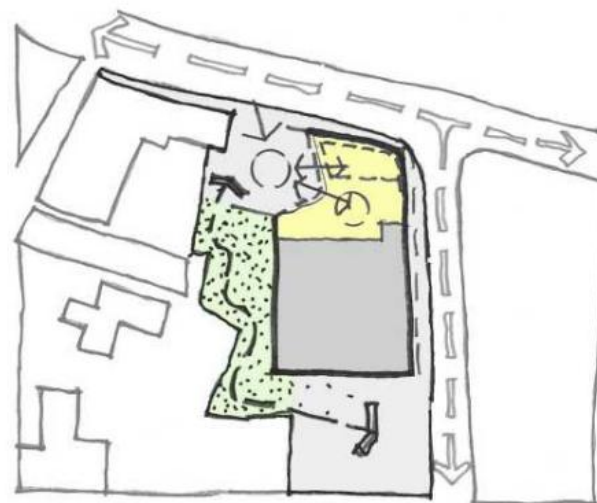
Low Carbon Journey



Concept - Schematic Plan

## DESIGN APPROACH AND PRINCIPLES

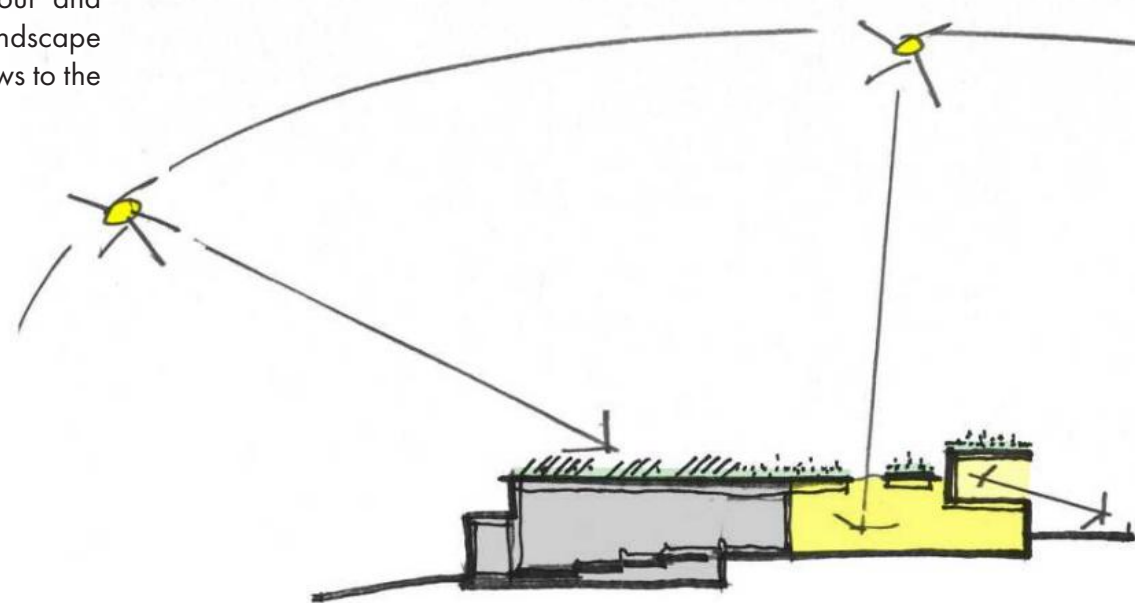
- The building presents itself in the round as a contextual response to the surrounding buildings and spaces defined by the East High Street, Leadenflower Street, Car Park and back land area. This is achieved by acknowledging the existing townscape of varied building types, styles and conditions by introducing a contemporary architecture that presents a contrasting intervention representative of its purpose and time. Thereby improving and enhancing the area in which it is situated.
- The overall architectural form and scale has been developed to clearly express each key element of the programme – public realm, open interior, closed interior and corner condition. This design approach will be developed further with material selection and detailing to articulate the form and its constituent parts within a unified composition.
- The larger and more introverted cinema spaces have been located within the lower sections of the site to minimise their visual impact by taking advantage of the significant level changes. Whilst the entrance foyer and public spaces have been located 'front of house' on the East High Street to present a clearly defined street presence and outdoor civic space.
- The building frontage provides a clearly defined building line with the street and pavement. This relationship changes as the pavement widens towards the courtyard area on the East High Street elevation, and into the courtyard space. To further emphasise the townscape importance of this location the Radio Earn facilities have been placed at first floor level, in full view, thereby clearly acknowledging the corner condition within the townscape context between East High Street and Leadenflower Street.
- The courtyard space provides improved public access and safety, potential for outdoor events and a gathering area. As a fully accessible outdoor public space it has good connectivity to the interior spaces and wild garden. It will enable the interior space and uses to 'spill out' and extend the social aspects of the programme within a clearly defined semi enclosed landscape terrace. The elevated positing of the terrace will overlook the wild garden and provide views to the surrounding countryside beyond.



Concept - Site Schematic

- The wild garden provides a natural habitat for encouraging and supporting biodiversity, locating SUDS, providing a direct public route from Leadenflower car park and surrounding neighbourhood. The open space also provides a distinctively 'green space' separation between the new building and neighbouring properties.
- Internal public spaces can be accessed directly off the courtyard and interconnect with each other. These 'front of house' spaces has large areas of glazing to achieve a strong visual 'on street' and courtyard presence of the spaces and provide significant daylight.
- Low - zero carbon generating technologies will be an integrated part of the design's strategic definition. This will include a fabric first approach of high performance u-values combined with the use of natural daylight/ventilation, thermal mass, solar PV, ASHP's and green roofs.
- As an integrated part of the development proposals there are proposed improvements to the public realm outside the venue, providing wider safer areas for walking and seating. Cycle parking is to be provided encouraging active travel along with wayfinding to allow visitors to easily find their way. There will no parking onsite provided within the development, as there are two existing carparks directly south of the proposed site on Leadenflower Street that also offer charging for electrical vehicles. Vehicular access to the building will be restricted to service vehicles during defined periods, and short stay drop-offs for people with mobility issues.

In addition, it is the case that the ability to provide entertainment and recreation closer to home within Crieff, will alleviate the need for people to drive 15 or 25+ miles for this recreation, and will directly reduce the overall carbon footprint and adverse impact on the environment.



Concept - Section





Leadenflower - a community-led project by  
local people delivering local change

Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

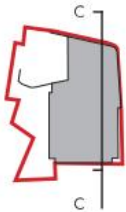
Proposed Elevation and Typical Section



EAST ELEVATION - LEADENFLOWER STREET



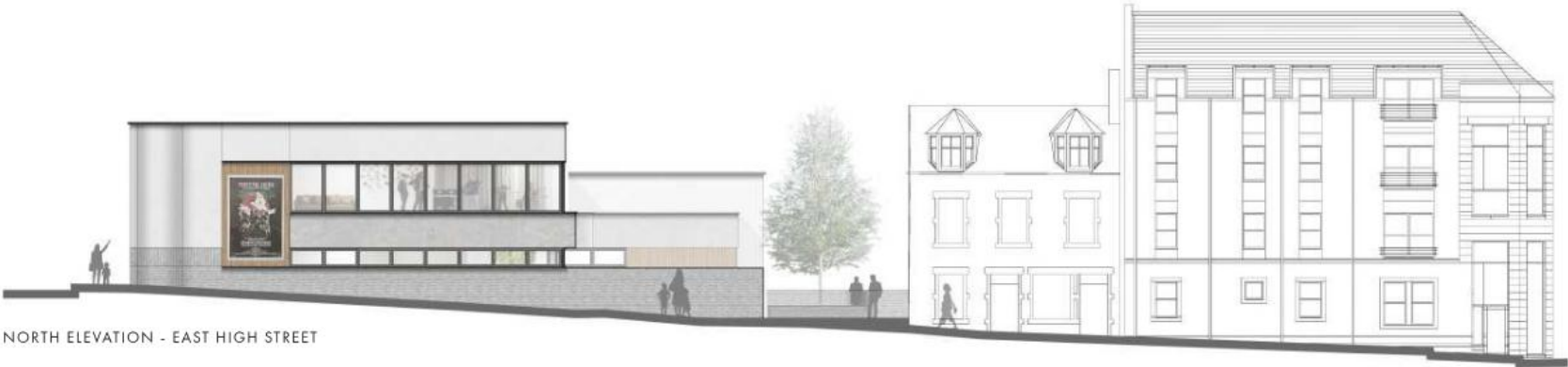
SECTION C-C





Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

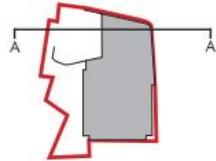
Proposed Elevation and Typical Section



NORTH ELEVATION - EAST HIGH STREET



SECTION A-A



Leadenflower Cinema and Community Radio Hub - East High Street, Crieff PH7 3HY

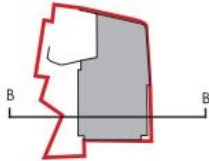
Proposed Elevation and Typical Section



SOUTH ELEVATION - LEADENFLOWER ROAD



SECTION B-B







EAST HIGH STREET

The building presents itself in the round as a contextual response to the surrounding buildings and spaces defined by the East High Street, Leadenflower Street, Car Park and back land area. This is achieved by acknowledging the existing townscape of varied types, styles and conditions by introducing a contemporary architecture that presents a contrasting intervention representative of its purpose and time. Thereby improving and enhancing the area in which it is situated.

The overall architectural form and scale has been developed to clearly express each key element of the programme – public realm, open interior, closed exterior and corner condition. This design approach will be developed further with material selection and detailing to articulate the form and its constituent parts within a unified composition.

The building frontage provides a clearly defined building line with the street and pavement. This relationship changes as the pavement widens towards the courtyard area on the East High Street elevation, and into the courtyard space. To further emphasise the townscape importance of this location the Radio Barn facilities have been placed at first floor level, in full view, thereby clearly acknowledging the corner condition within the townscape context between East High Street and Leadenflower Street.

Internal public spaces can be accessed directly off the courtyard and interconnect with each other. These 'front of house' spaces has large areas of glazing to achieve a strong visual 'on street' and courtyard presence of the spaces and provide significant daylight.

The courtyard space provides improved public access and safety, potential for outdoor events and a parking area. As a fully accessible outdoor public space it has good connectivity to the interior spaces and wild garden. It will enable the interior space and users to 'spill out' and extend the social aspects of the programme within a clearly defined semi enclosed landscape terrace. The elevated positioning of the terrace will overlook the wild garden and provide views to the surrounding countryside beyond.

The larger and more 'interventive' cinema spaces have been located within the lower sections of the site to minimise their visual impact by taking advantage of the significant level changes. Whilst the entrance foyer and public spaces have been located 'front of house' on the East High Street to present a clearly defined street presence and outdoor civic space.

Low - zero carbon generating technologies will be an integrated part of the design's strategic definition. This will include a fabric first approach of high performance u-values combined with the use of natural daylight/ventilation, thermal mass, solar PV, ASHP's and green roofs.

The wild garden provides a natural habitat for encouraging and supporting biodiversity, locating SUDS, providing a direct public route from Leadenflower car park and surrounding neighbourhood. The open space also provides a distinctively 'green space' separation between the new building and neighbouring properties.



Courtyard looking into the cinema and bistro



Main foyer and box office



Aerial axonometric



# Leadenflower Cinema + Community Radio Hub - East High Street, Crieff, PH7 3HY

Planning Reference: 22/ 01282/FLL To be read in conjunction with: Response to Conservation Officer's Comments

## Streetscape

- Commercial / Hotel
- Set Back from Street
- Residential



FPA

Read in conjunction with other consultants information and health and safety plan. This drawing must only be used for the purpose for which it is supplied and contents must not be reproduced for any purpose without written permission.

PROJECT:  
Proposed demolition of the former Crieff Hotel and replacement cinema and community radio hub, with extended public realm work

DATE:  
OCT 22  
DRAWN:  
FL

TITLE:  
Streetscape Analysis  
PURPOSE:  
Additional Information

SCALE:  
nts

DRAWING:  
001  
REVISION:  
-

FERGUS PURDIE ARCHITECT  
5A MELVILLE STREET, PERTH  
PH1 5PY  
01783 444122  
mail@ferguspurdiearchitect.co.uk







**LRB-2023-02**

**22/01282/FLL – Erection of a cinema and community radio hub and associated works, 47-49 East High Street, Crieff, PH7 3HY**

## **REPRESENTATIONS**





Thursday, 18 August 2022



Local Planner  
Planning and Development  
Perth and Kinross Council  
Perth  
PH1 5GD

Development Operations  
The Bridge  
Buchanan Gate Business Park  
Cumbernauld Road  
Steps  
Glasgow  
G33 6FB

Development Operations  
Freephone Number - 0800 3890379  
E-Mail - [DevelopmentOperations@scottishwater.co.uk](mailto:DevelopmentOperations@scottishwater.co.uk)  
[www.scottishwater.co.uk](http://www.scottishwater.co.uk)



Dear Customer,

**47 - 49 East High Street, Crieff, PH7 3HY**  
**Planning Ref: 22/01282/FLL**  
**Our Ref: DSCAS-0070924-N55**  
**Proposal: Erection of cinema and community radio hub and associated works**

**Please quote our reference in all future correspondence**

### **Audit of Proposal**

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced. Please read the following carefully as there may be further action required. Scottish Water would advise the following:

### **Water Capacity Assessment**

Scottish Water has carried out a Capacity review and we can confirm the following:

- ▶ There is currently sufficient capacity in the Turret Water Treatment Works to service your development. However, please note that further investigations may be required to be carried out once a formal application has been submitted to us.

### **Waste Water Capacity Assessment**

- ▶ There is currently sufficient capacity for a foul only connection in the Crieff Waste Water Treatment works to service your development. However, please note that further investigations may be required to be carried out once a formal application has been submitted to us.

## Please Note

- ▶ The applicant should be aware that we are unable to reserve capacity at our water and/or waste water treatment works for their proposed development. Once a formal connection application is submitted to Scottish Water after full planning permission has been granted, we will review the availability of capacity at that time and advise the applicant accordingly.

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## Asset Impact Assessment

Scottish Water records indicate that there is live infrastructure in the proximity of your development area that may impact on existing Scottish Water assets.

- ▶ 225mm combined sewer

The applicant must identify any potential conflicts with Scottish Water assets and contact our Asset Impact Team via [our Customer Portal](#) for an appraisal of the proposals.

The applicant should be aware that any conflict with assets identified will be subject to restrictions on proximity of construction. Please note the disclaimer at the end of this response.

Written permission must be obtained before any works are started within the area of our apparatus

## Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical, and technical challenges.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

## General notes:

- ▶ Scottish Water asset plans can be obtained from our appointed asset plan providers:
  - ▶ Site Investigation Services (UK) Ltd
  - ▶ Tel: 0333 123 1223
  - ▶ Email: [sw@sisplan.co.uk](mailto:sw@sisplan.co.uk)



▶ [www.sisplan.co.uk](http://www.sisplan.co.uk)

- ▶ Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area, then they should write to the Customer Connections department at the above address.
  - ▶ If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.
  - ▶ Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.
  - ▶ The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.
  - ▶ Please find information on how to submit application to Scottish Water at [our Customer Portal](#).
- 

## **Next Steps:**

### **▶ All Proposed Developments**

All proposed developments require to submit a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water via [our Customer Portal](#) prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

### **▶ Non Domestic/Commercial Property:**

Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider to act on their behalf for new water and waste water connections. Further details can be obtained at [www.scotlandontap.gov.uk](http://www.scotlandontap.gov.uk)

### **▶ Trade Effluent Discharge from Non-Domestic Property:**

- ▶ Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and launderettes. Activities not covered include hotels, caravan sites or restaurants.
- ▶ If you are in any doubt as to whether the discharge from your premises is likely to be trade effluent, please contact us on 0800 778 0778 or email [TEQ@scottishwater.co.uk](mailto:TEQ@scottishwater.co.uk) using the subject "Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found [here](#).
- ▶ Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.
- ▶ For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas, so the development complies with Standard 3.7 a) of the Building Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.
- ▶ The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at [www.resourceefficientscotland.com](http://www.resourceefficientscotland.com)

I trust the above is acceptable however if you require any further information regarding this matter please contact me on **0800 389 0379** or via the e-mail address below or at [planningconsultations@scottishwater.co.uk](mailto:planningconsultations@scottishwater.co.uk).

Yours sincerely,

**Angela Allison**

Development Services Analyst

[PlanningConsultations@scottishwater.co.uk](mailto:PlanningConsultations@scottishwater.co.uk)

### Scottish Water Disclaimer:

*"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."*





## Comments to the Development Quality Manager on a Planning Application

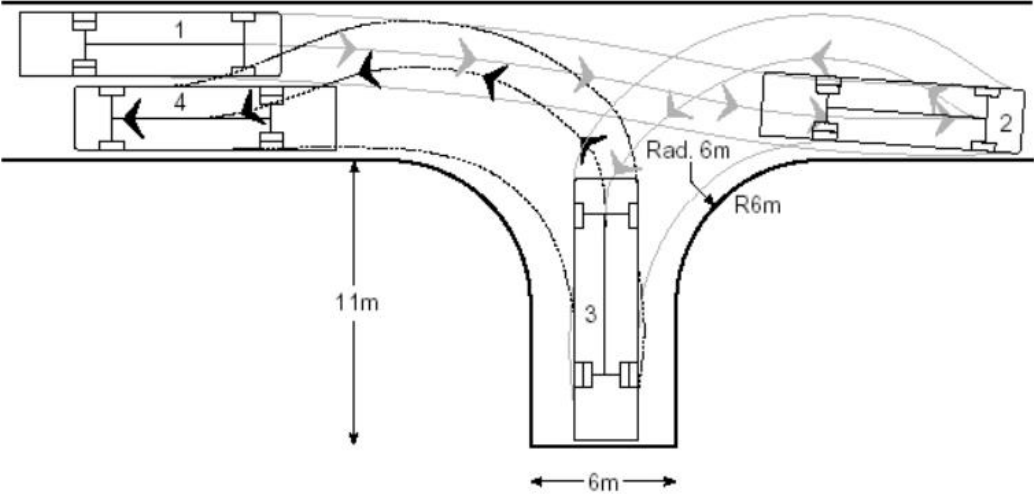
Planning Application ref.	22/01282/FLL	Comments provided by	Robert Amponfi																												
Service/Section	Commercial Waste Team – Waste Services	Contact Details																													
Description of Proposal	Erection of cinema and community radio hub and associated works																														
	47 - 49 East High Street Crieff PH7 3HY																														
	There’s no provision for waste in this planning application. We would recommend that there is a central storage area for waste collection. Under the terms of the Waste (Scotland) Regulations 2012 and the 2014 amendment, businesses have a responsibility for the segregation of materials such as glass, metal, plastics, paper, and cardboard for recycling. I would therefore recommend that the proposed bin store be of sufficient size to accommodate the following:																														
	<ul style="list-style-type: none"><li>• 3 x 1280L containers for general waste</li><li>• 3 x 1280L container for cans &amp; plastics waste</li><li>• 3 x 1280L container for paper &amp; cardboard waste</li><li>• 2 x 140L bins for Food waste.</li></ul>																														
	The business will also need to create a space for DRS (Deposit Return Scheme). For more information, please visit - <a href="https://depositreturnscheme.zerowastescotland.org.uk">https://depositreturnscheme.zerowastescotland.org.uk</a>																														
Recommended planning condition(s)	Dimensions are;																														
	<table><tr><th colspan="4">Bin Dimensions</th></tr><tr><th>Bin Size</th><th>Width(mm)</th><th>Depth(mm)</th><th>Height(mm)</th></tr><tr><td>140L</td><td>480</td><td>544</td><td>1060</td></tr><tr><td>240L</td><td>600</td><td>880</td><td>1090</td></tr><tr><td>360L</td><td>585</td><td>740</td><td>1070</td></tr><tr><td>1100L</td><td>1250</td><td>980</td><td>1370</td></tr><tr><td>1280</td><td>1260</td><td>985</td><td>1430</td></tr></table>			Bin Dimensions				Bin Size	Width(mm)	Depth(mm)	Height(mm)	140L	480	544	1060	240L	600	880	1090	360L	585	740	1070	1100L	1250	980	1370	1280	1260	985	1430
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Waste must be contained, and the collection point must be provided.																															
We would expect that the waste will be collected on site and therefore road specifications need to allow access for RCVs. Specifications are as follows:																															
<ul style="list-style-type: none"><li>• Surfaces: The refuse collection operative must have clear access to the bin storage area and where possible the surfaces must be a paved or hard finished, which must be smooth, where possible, without steps or kerbs with a minimum width of 1.5 metres and clear headroom of 2 metres.</li><li>• Working Area Dimensions; Where a refuse vehicle is required to drive onto a site or to work under any structure there should be a minimum height</li></ul>																															

clearance of 4.5 metres, with a minimum working area of 3.5 metres width by 4 metres length where the emptying of the containers will take place.

- The lengths of refuse collection vehicles vary between 10 to 12 metres, with a width of 2.54 metres (width of mirrors extra) the working length should take account of the size of the container, making the length of the vehicle with the container in emptying position one metre longer. A further 3 metres is required for operatives to stand clear of the bin whilst being lifted, therefore a minimum of 16 metres is required.
- The emptying position that the vehicle manoeuvres to and operates from should be relatively level and flat for the entire length of vehicle and container. Any slopes or gradients (other than those necessary for surface water drainage) should be avoided
- Access Roads; Loading: All vehicle access roads that the refuse collection vehicles will be required to use must be constructed to withstand a gross vehicle weight of 32 tonnes and axle loading of 11.5 tonnes. Manhole covers, gratings etc. situated in the road must also be capable of withstanding the loads indicated.
- Look towards a minimum of 4 metres in width and the layout should permit the vehicle to travel in a forward direction. The turning circle for refuse collection vehicles is approximately 24 metres. See FTA diagram
- Refuse collection vehicles should not be expected to reverse over any great distances to or from the collection point. Attention is drawn to the Health and Safety Executive publication Workplace Transport Safety Guidance for Employers. Page 32 - examples of safe working practices – states in paragraph 129:
- Nearly a quarter of all deaths involving vehicles at work occur while vehicles are reversing. Many other reversing accidents do not result in injury but cause costly damage to vehicles, equipment and premises.
- Paragraph 130 continues:  
The most effective way of dealing with the risk of reversing accidents is to remove the need for reversing altogether.

Therefore, roads with inadequate width or turning facilities that would be inaccessible to collection vehicles should have designated collection points on or near a nearby public highway.



	<p><b>FTA Large rigid design vehicle</b> <b>Side road stub</b></p> 
<p><b>Recommended informative(s) for applicant</b></p>	<p>If the applicant has different types of waste or expects different quantities than mentioned above information on services available can be obtained from <a href="http://www.pkc.gov.uk/commercial">www.pkc.gov.uk/commercial</a>.</p>
<p><b>Date comments returned</b></p>	<p>22/08/2022</p>



## Mr Tom Alves (Neutral)

Comment submitted date: Tue 23 Aug 2022

In general principle this proposal looks as though it'll be an asset to the town and as such I welcome the development especially if it replaces the current ruin that is the Crieff Hotel.

The very real concern I have is one of noise. Looking at the plans I suspect this has been addressed but it is worth raising. Do the plans have adequate soundproofing.

The Crieff Hotel was in the habit of holding parties late into the evening and as the function suite wasn't sound proofed it led to many a disturbed night. (One infamous evening the Crieff Community Council kept the neighbourhood awake until past 1 a.m.). There were several breaches in licensing conditions and absolutely no concern was given to the residents in surrounding streets despite repeated contact with PKC.

I am hoping there won't be a repeat of those levels of noise nor of the lateness of the events and the Creative Crieff will be more considerate to the properties in the immediate vicinity.





PERTH AND KINROSS COUNCIL,  
PLANNING AND DEVELOPMENT,  
PULLAR HOUSE,  
35 KINNOULL STREET  
PH1 5GD.

29/08/22

PLANNING APPLICATION 22/01282/FLL

Dear Sir,

In previous correspondence regarding the above application, I outlined my concerns regarding the parking of demolition/construction vehicles during all phases of the development.

Headenflower Place, being a cul-de-sac, has very restricted parking space for residents' cars as it is, with minimal off-street parking.

I had enquired as to what arrangements would be made for parking of vehicles during the construction phases and also whether additional parking for residents vehicles could be made available.

The existing upper car park on Headenflower street will, it seems, be reduced in size and a concern was raised by me about non-resident vehicles then seeking to park on Headenflower Place during & after the development's construction phase.

Please give careful consideration to the matters that I have raised and advise accordingly.

Yours faithfully,

A.T. FERNIE.





# Memorandum

To Development Management & Building  
Standards Service Manager

From Regulatory Services Manager

Your ref 22/01282/FLL

Our ref LRE

Date 6 September 2022

Tel No [REDACTED]

Communities

Pullar House, 35 Kinnoull Street, Perth PH1 5G

## **Consultation on an Application for Planning Permission**

**22/01282/FLL RE: Erection of cinema and community radio hub and associated works, 47 - 49 East High Street, Crieff for Creative Crieff**

I refer to your letter email dated 17 August 2022 in connection with the above application and have the following comments to make.

### **Environmental Health**

#### **Recommendation**

**I have no objections in principle to the application but recommend that the undernoted conditions are included on any given consent**

#### **Comments**

This application is for the erection of cinema and community radio hub building which will replace the former Crieff Hotel.

Plans indicate that there is to be two cinema areas, one with a seating capacity of 140 and another for 50. Also on the ground level there is a bistro/bookshop and plant room.

There are two letters of representation at the time of writing this memorandum raising concerns with regards to noise and parking.

There are residential properties within close proximity on all elevations to the proposed development.

### **Air Quality**

The application site is within Crieff's Air Quality Management Area which was declared for exceedences of the annual mean objectives for Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>10</sub>) due to road traffic emissions.

The application is not introducing any new parking spaces with the development and patron visiting the cinema will utilise the existing parking at Leadenflower car park

The Environmental Protection UK and Institute of Air Quality Management's current Guidance on Planning for Air Quality. Development requiring assessment is defined in the Environmental Health consultation criteria and includes any large commercial proposal (with 50+ parking spaces) within, or up to 1km of, an AQMA therefore, I have no adverse comments to make with regards to air quality from the operational stage of the development.

However, there is a risk of dust and particulate matter at the construction stage to have an adverse effect on local air quality. The main air quality impacts that may arise during demolition and construction activities are from dust elevated PM<sub>10</sub> concentrations, as a result of dust generating activities and an increase in concentrations of airborne particles and

nitrogen dioxide due to exhaust emissions from diesel powered vehicles and equipment used on site (non-road mobile machinery) and vehicles accessing the site.

Therefore, I recommend that the applicant should submit and undertake a Dust Assessment Report which should be in line with the *IAQM guidance on the assessment of dust from demolition and construction 2014*. The report should include a section detailing the site-specific mitigation required to ensure there is no significant effect and depending on the risk of dust effects any proposed monitoring to be carried out during the demolition and construction stages.

### **Noise**

There is the potential from noise from the daily operations of the cinema and radio hub to adversely affect the residential amenity of existing dwellinghouses. The main noise sources of concern are from any plant equipment and from any outbreak noise from the cinema screening areas.

Although I have no objection to the development, I recommend that the undernoted conditions be included on any given consent.

### **Conditions**

- Prior to the commencement of the development a Dust Management Plan shall be submitted for the approval of the Planning Authority and Environmental Health. The plan shall include good practise and site specific mitigation measures for the control of dust during the demolition/construction stages of the development.

**EH12** The sound insulation and sound transmission properties of the structure and finishes shall be such that any airborne noise from the operations within the premises does not constitute a statutory noise nuisance as determined by the Local Planning Authority.

**EH10** All plant or equipment shall be so enclosed, attenuated and/or maintained such that any noise therefrom shall not exceed Noise Rating 35 between 0700 and 2300 hours daily, or Noise Rating 25 between 2300 and 0700 hours daily, within any neighbouring residential property, with all windows slightly open, when measured and/ or calculated and plotted on a rating curve chart.

**EH14** No music, amplified or otherwise, shall be permitted in the outdoor area at any time.

**EH02** Servicing of and deliveries to the premises shall be carried out between 0700 and 1900 Monday to Saturday only, with no servicing or deliveries permitted on Sundays.

**EH20** Prior to the development hereby approved being completed or brought into use, an effective ventilation system commensurate with the nature and scale of cooking to be undertaken shall be installed and operated such that cooking odours are not exhausted into or escape into any neighbouring buildings. Thereafter the system shall be maintained.

**EH31** All external lighting shall be sufficiently screened and aligned so as to ensure that there is no direct illumination of neighbouring land and that light spillage beyond the

boundaries of the site is minimised to a degree that it does not adversely affect the amenity of the neighbouring land.









To:	Diane Barbary, Planning Officer
From:	Sophie Nicol, Historic Environment Manager
Tel:	01738 477027
Email:	Sophie.Nicol@pkht.org.uk
Date:	7th September 2022

**22/01282/FLL | Erection of cinema and community radio hub and associated works | 47 - 49 East High Street Crieff PH7 3HY**

Thank you for consulting PKHT on the above application. As outlined in our previous email regarding this scheme the proposed development site is archaeologically sensitive as it includes the demolition of the former Crieff Hotel, that predates the 1<sup>st</sup> Edition Ordnance Survey. The earlier Plan of the Town of Crieff, published in 1822 by John Wood, shows an established town centre that includes the same building layout as depicted on the 1<sup>st</sup> Edition OS.

Although the building has undergone various small demolitions and modifications over the years it still retains some of its historic character that adds value and character to the historic townscape of Crieff and Conservation Area. The Local Development Plan 2019 notes that historic assets should be protected and preserved in situ wherever feasible. It is also noted in Scottish Planning Policy (paragraph 137) that development of historic buildings can positively contribute to a sense of place when appropriately re-purposed. The proposed loss of this historic resource is unfortunate, and we would **strongly recommend** that the building is re-purposed if at all feasible.

We have read through the viability assessment for the project, which shows that the repair of this building is not straightforward given its poor condition and costs involved. PKHT maintain the standpoint that historic assets are a finite resource that should be maintained and repaired regularly to ensure longevity of our historic buildings and townscapes and are not supportive of demolition. However, should the application be successful we believe that a Detailed Historic Building Survey would be undertaken on the site in advance of any works. This will involve full map regression and historic archive research as well as measured survey and photography to be undertaken by a qualified archaeologist. Since our last memo we did receive a query from the applicant for a Terms of Reference for an SBR which we have provided. As far as we are aware no survey has yet been undertaken.

In addition, given this building's proposed full removal we suggest that as part of the standing building condition that the timber work is considered by the archaeological contractor on suitability for dendrochronology (tree-ring dating). This may not be considered appropriate in this instance and will be dependent on the site visit and results of the SBR.

Its also worth noting that there may be potential for earlier evidence of settlement at Crieff at this location. To the south, groundworks in advance of a housing development in Leadenflower Road, broke through a large wooden structure which turned out to be a 18<sup>th</sup> Century Tannery (MPK6125).

Therefore, should this scheme be granted consent we recommend a detailed historic building survey should be undertaken to ensure an appropriate archaeological standing building survey is carried out and the resulting survey is recorded properly prior to demolition. We also recommend for any grubbing out of foundations or groundbreaking works that a condition for monitoring is placed on consent.

**Recommendation:**

In line with Scottish Planning Policy historic environment section (paragraphs 135-137 and 150), it is recommended that the following condition for historic building survey and a programme of works be attached to consent, if granted:

**HE25** *Development shall not commence until the developer has secured the implementation of a programme of archaeological work in accordance with a written scheme of archaeological investigation which has been submitted by the applicant, and agreed in writing by the Council as Planning Authority, in consultation with Perth and Kinross Heritage Trust. Thereafter, the developer shall ensure that the programme of archaeological works is fully implemented including that all excavation, preservation, recording, recovery, analysis, publication and archiving of archaeological resources within the development site is undertaken. In addition, the developer shall afford access at all reasonable times to Perth and Kinross Heritage Trust or a nominated representative and shall allow them to observe work in progress.*

And

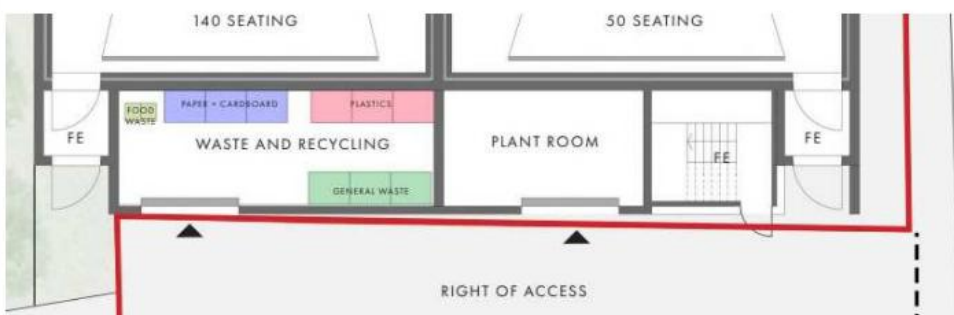
**HE26** *Development shall not commence until the developer has secured an archaeological standing building survey, to be carried out by an independent and suitable qualified archaeological organisation. The scope of the archaeological standing building survey will be set by Perth and Kinross Heritage Trust on behalf of the Council as Planning Authority. The name of archaeological organisation retained by the developer shall be given to the Planning Authority and Perth and Kinross Heritage Trust in writing not less than fourteen days before the commencement date provided in the Notice of Initiation of Development. Copies of the resulting survey shall be deposited in the National Monuments Records for Scotland and in the Perth and Kinross Historic Environment Record upon completion of the survey.*

Notes:

1. **Should consent be given, it is important that the developer, or their agent, contact me as soon as possible. I can then explain the procedure of works required and, if necessary, prepare for them written Terms of Reference.**
2. This advice is based on information held on the Perth and Kinross Historic Environment Record. This database of archaeological sites and historic buildings is regularly updated.



## Comments to the Development Quality Manager on a Planning Application

<b>Planning Application ref.</b>	22/01282/FLL	<b>Comments provided by</b>	Lachlan MacLean Project Officer – Transport Planning
<b>Service/Section</b>	Transport Planning	<b>Contact Details</b>	TransportPlanning@pkc.gov.uk
<b>Description of Proposal</b>	Erection of cinema and community radio hub and associated works		
<b>Address of site</b>	47 - 49 East High Street, Crieff PH7 3HY		
<b>Comments on the proposal</b>	<p>The applicant is proposing to replace a former hotel with a new cinema and community radio hub.</p> <p>The vehicle access to the public road network for the property will be restricted to service vehicles, which has been confirmed as being from Leadenflower Street. The applicant has updated the plans to show that on the ground floor at the Leadenflower Street Car Park, there will be a Plant Room along with Waste and Recycling Facilities, as shown in Figure 1. The updated plans also show that there is a right of access within the black dotted line which will be used for the purposes of waste collection and drop offs.</p>  <p><b>Figure 1: Rear of building, along with confirmation of right of access</b></p> <p>The applicant is not proposing to provide car parking on site, a development of this use would attract 19 spaces, based on 10 spaces per seat. To the south of the development site, there are two public car parks on Leadenflower Street and Leadenflower Road, providing in excess of 80 publicly available parking spaces. The off-street car parks are currently free to use.</p> <p>The updated plans show that there will be cycle parking will be provided on site. The applicant is proposing to provide a minimum of cycle parking spaces, which meets the requirements of the National Roads Development Guide. <b>A condition is recommended for the provision of secure cycle parking on site.</b></p> <p>On the A85, there is an existing dropped kerb on East High Street, which can be utilised for anyone cycling to the site. The position of the dropped kerb</p>		

	<p>has not been shown on the plans, nevertheless, shall be suitable for pushing a bicycle off the trunk road over the footway and into the site.</p> <p>The applicant is proposing to widen the footways on East High Street and Leadenflower Street. With the footway widening and set back of the building, a visibility splay 2.4 metres back from the trunk road network can be provided from the public road network. The works proposed will involve the removal of the dropped kerb along the length of Leadenflower Street adjacent to the building and a full kerb upstand shall be provided, with the exclusion of a dropped kerb for crossing Leadenflower Street at the junction of East High Street. <b>A condition is recommended to secure the works.</b></p> <p>There is an existing bus stop flag attached to a street lighting column next to where the development will be constructed. This bus stop must be maintained at this locality, but it is accepted it may require to be temporarily relocated to accommodate development access requirements. Costs to do this will be met by the applicant. Please consult David Rae [REDACTED] and Moray Fraser [REDACTED] of the Public Transport Unit regarding any relocation.</p> <p>With the development being close to the public road network, a construction traffic management plan will be required for the site detailing the demolition and construction phases. The plan shall detail how access to the public car park will be maintained throughout the works. <b>A condition is recommended for a Construction Management Plan.</b></p> <p>If the applicant is successful in gaining planning consent, they must apply for a Section 56 before starting any works within the public road network. Application forms are available at <a href="https://www.pkc.gov.uk/article/14916/Road-and-footway-permits">https://www.pkc.gov.uk/article/14916/Road-and-footway-permits</a>.</p> <p>Insofar as the Roads matters are concerned, I have no objections to this proposal on the following conditions.</p>
<p><b>Recommended planning condition(s)</b></p>	<p>Prior to commencement of any development on site, a detailed design for the proposed secure cycle parking facility for a minimum of 14 cycles shall be submitted to and approved in writing by the Planning Authority in consultation with the Roads Authority. The applicant can seek guidance on the detailed design and positioning of the cycle storage from Transport Scotland's Cycling by Design 2021 or similar design guide. The cycle parking, as approved in writing, shall be implemented in accordance with the approved details to the satisfaction of the Council as Planning Authority prior to the development being brought into use.</p> <p>Reason - To encourage active travel and meet advice within Scottish Planning Policy on transport.</p> <p>Prior to the commencement of the development hereby approved, the applicant shall submit for the further written agreement of the Council as Planning Authority, in consultation with the Roads Authority (Structures), a</p>

	<p>Construction Traffic Management Scheme (TMS) which shall include the following:</p> <ul style="list-style-type: none"> <li>(a) restriction of construction traffic to approved routes and the measures to be put in place to avoid other routes being used;</li> <li>(b) timing of construction traffic to minimise impact on local communities particularly at school start and finishing times, on days when refuse collection is undertaken, on Sundays and during local events;</li> <li>(c) a code of conduct for HGV drivers to allow for queuing traffic to pass;</li> <li>(d) arrangements for liaison with the Roads Authority regarding winter maintenance;</li> <li>(e) emergency arrangements detailing communication and contingency arrangements in the event of vehicle breakdown;</li> <li>(f) arrangements for the cleaning of wheels and chassis of vehicles to prevent material from construction sites associated with the development being deposited on the road;</li> <li>(g) arrangements for cleaning of roads affected by material deposited from construction sites associated with the development;</li> <li>(h) arrangements for signage at site accesses and crossovers and on roads to be used by construction traffic in order to provide safe access for pedestrians, cyclists and equestrians;</li> <li>(i) details of information signs to inform other road users of construction traffic;</li> <li>(j) arrangements to ensure that access for emergency service vehicles are not impeded;</li> <li>(k) co-ordination with other significant developments known to use roads affected by construction traffic;</li> <li>(l) traffic arrangements in the immediate vicinity of temporary construction compounds;</li> <li>(m) the provision and installation of traffic counters at the applicant's expense at locations to be agreed prior to the commencement of construction;</li> <li>(n) monitoring, reporting and implementation arrangements;</li> <li>(o) arrangements for dealing with non-compliance; and</li> <li>(p) details of HGV movements to and from the site.</li> </ul> <p>The TMS as approved shall be strictly adhered to during the entire site construction programme.</p> <p>Reason - In the interest of proper site management.</p> <p>Prior to the development hereby approved being completed or brought into use, the footway along the frontage of the development site on Leadenflower Street shall be reconstructed, along with a full height kerb and a dropped kerb for pedestrians to cross Leadenflower Street at the junction of East High Street, using the construction detail below for the footway:</p>
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	<ul style="list-style-type: none"> <li>• 25mm Surface Course</li> <li>• 50mm Binder Course</li> <li>• 225mm Sub-base type 1</li> </ul> <p>The work shall be supervised by the Area Roads Engineer and in accordance with standards of the Roads Authority.</p> <p>Reason - In the interests of road safety; to ensure an acceptable standard of construction within the public road boundary.</p> <p>No part of the development shall be occupied until a Staff Travel Plan (STP), aimed to encourage more sustainable means of travel, has been submitted to and agreed in writing by the Council in consultation with Transport Planning. The STP will have particular regard to provision for walking, cycling and public transport access to and within the site and will identify the measures to be provided, the system of management, monitoring, review, reporting and the duration of the plan.</p> <p>Reason - To promote sustainable transport options and to meet advice within Scottish Planning Policy on transport.</p>
<b>Recommended informative(s) for applicant</b>	<p>There is an existing bus stop flag attached to a street lighting column next to where the development will be constructed. This bus stop must be maintained at this locality, but it is accepted it may require to be temporarily relocated to accommodate development access requirements. Costs to do this will be met by the applicant. Please consult David Rae [REDACTED] and Moray Fraser [REDACTED] of the Public Transport Unit regarding any relocation.</p> <p>Street lighting plant present at the site, discussions must be had with the Street Lighting Partnership to obtain the locations of plant and the possible relocation to facilitate the vehicle access. Contact Mark Gorrie at Perth &amp; Kinross Council Street Lighting Department for further details.</p>
<b>Date comments returned</b>	03 October 2022