

Temple Dinsley: 2412401604FP and 2401605LBC

Sustainability Assessment

This document provides further details on how the development proposal at Temple Dinsley fulfils North Hertfordshire Council's Sustainability Supplementary Planning Document (SPD) requirements.

This assessment should be read in conjunction with the Energy Statement, prepared by CBG Consultants.

- 11951-CBG-XX-XX-RP-ME-90005-P01 - Energy Statement (SAP Compliance)

Project Summary ~ SPD Themes & Targets

SPD Themes

Target

1.Optimising Passive Design & Fabric Performance

Gold – New builds

2. Achieving low-carbon energy

Gold / LETI – New builds
Silver – Retrofits

3. Minimising carbon footprint

3a. Whole Life Cycle Assessment (all residential development)

Bronze

3b. Circular Economy Principles (Major residential developments)

Bronze

4. Healthy placemaking

4a. Green & Blue Infrastructure, NHS Health into Place Principles for Residential Development

Bronze+

4b. Urban Greening Factor (UGF) for Major Residential Scheme

Gold

5. Promoting biodiversity

5a. Ecological Surveys & Assessment

Silver

5b. Arboriculture Assessment (where trees are impacted by proposal)

Silver

5c. BNG

Silver

5d. Ecological buffers

Gold

6. Sustainable travel

6a. Transport statements, assessments and travel plans

Bronze

6b. EV charging

Bronze

7. Conserving water

Silver

8. Incorporating sustainable drainage

Bronze +

9. Historic Buildings

N/A

Supporting References

Design Access Statement (DAS)

Theme Criteria

For Bronze

- Achieve an EPC rating of at least C on all dwellings,
- Submit a Sustainability & Energy Statement showing compliance with Policy and Building Regulations (this should include the Energy Use Intensity (EUI) & the total Space Heating Demand (SHD) calculations with recommendations on methods that could be investigated during technical design to improve performance).

For Silver

- Achieve 80% EPC ratings of at least B and 20% rating of at least C,
- Submit a Sustainability & Energy Statement from a qualified body showing:
 - maximisation of solar gain through site layout, orientation, and design (for the purpose of energy efficiency),
 - measures to prevent overheating,
 - lower carbon alternatives to gas boilers,
 - on-site reductions of 50% (minimum) in CO₂ emissions over and above Building Regulations Part L (including at least 10% reductions through fabric first measures) (inclusive of MHVR),
 - EUI ≤ 60 kWh/m²/yr (inclusive of estimated unregulated energy) (RIBA 2025),
 - SHD ≤ 30 kWh/m²/yr (Passivhaus low energy building) or ≤ 40 kWh/m²/yr (AECB/ Energies prong new build).

For Gold

Achieve an EPC rating of B on all dwellings

- Submit a Sustainability & Energy Statement showing:
 - on-site reductions of 50% (minimum) in CO₂ emissions over and above Building Regs Part L (including at least 10% reductions through fabric first measures)
 - commitment to achieve Passivhaus certification and site assessment at planning stage using Passive House Planning Package (PHPP) to confirm compliance against Passivhaus Classic, Plus or Premium.
 - Or assessment of the development using CIBSE TM54 or alternative operational energy modelling software and confirms compliance with LETI or RIBA 2030 standards:
 - EUI ≤ 35 kWh/m²/yr
 - SHD ≤ 15 kWh/m²/yr

Proposal Highlight

New Buildings – NHDC Gold Standard

All new housing will achieve EPC rating A, as well adopting the London Energy Transformative Initiative (LETI) standards for operational energy targets, i.e. EUI ≤ 35kWh/ m²/ year and SHD ≤ 15kWh/ m²/ year. Additionally, meeting 65% of on-site reduction in CO₂ emission, exceeding the NHDC gold level requirements (50% on-site reduction in CO₂ emission).

Existing Buildings

A balance must be struck between improving energy efficiency and conserving and enhancing the historic environment when considering a retrofit approach in the context of Temple Dinsley, a Grade II* Listed building, curtilage buildings and its parkland. Energy efficiency measures that complement the traditional building construction shall be adopted and are outlined in Theme 9. These are sympathetic to the historic fabric of high significance and are more intensive where the fabric is of less significance due to C20 alterations and extensions. The Sustainable Traditional Building Alliance Retrofit Wheel has been used to summarise the broad measures that are to be adopted. Please refer to Theme 9.

SPD Themes

2. Achieving low-carbon energy

Target

Gold / LETI – New builds

Silver – Retrofits

Supporting References

CBG Energy Statement, M&E Feasibility Report

Theme Criteria

For Bronze ~

- Ensure development is Policy & Building Regulations compliant
- Larger schemes (>10 dwellings) are encouraged to submit a Feasibility Study from an Energy Specialist showing how the most appropriate Low/Zero Carbon technology will be implemented on site.

For Silver ~

- Show that 75% or more of dwellings energy demand is supplied from onsite renewable technology such as PV (assuming low carbon heating/hot water technology is used such as ASHPs)
- Show that roof shape and orientation is optimised to maximise solar PV outputs
- Show that the development commits to investigating better uses of PV (if present) and detail what these are (connecting any array directly to the landlord supply should NOT be allowed. Options could include: SolShare (or similar), connecting to thermal stores of communal heat pumps)

For Gold ~

In addition to silver level requirements

- 100% dwelling's energy demand is supplied from onsite renewable technology such as PV (assuming low carbon heating/ hot water technology is used such as ASHPs)

Proposal Highlight

Silver ~ On-site renewable technology: Solar PV

On-site renewable energy technology, i.e. PV slates on new housing (~495 m²), PV panels on the roof of East Car Park (~1,306m²), will generate an estimate of 244,550kWh/a, which offsets local energy consumption of 25% from retrofitted buildings and 100% from new buildings.

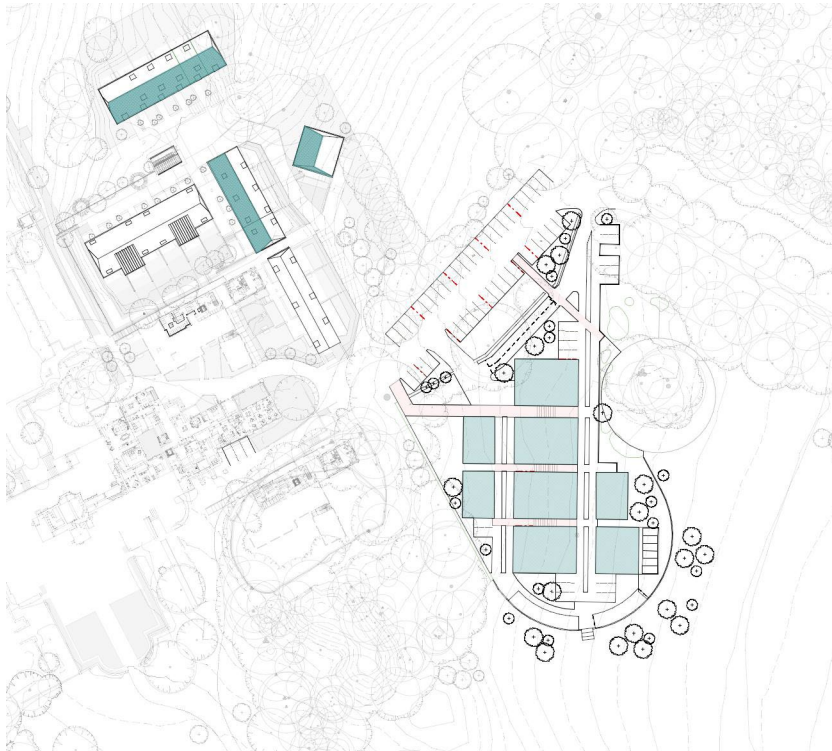


Fig. Indicative location of PV panels

LETI ~ Carbon neutral for New-build housing

The estimated consumption for new build properties is 135,415kWh/a (assuming EUI @ 35kWh/m2.a). General assessment and approach to achieving carbon neutral for the development is outlined in Energy Statement and M&E Feasibility Report.

Following the energy hierarchy, reductions in regulated energy requirements and associated CO2 emissions have been made at each stage. The strategy detailed in Be Green stage demonstrates a further carbon emission reduction of 65% against SAP 10 baseline for the new built dwellings. In total, the new built dwelling houses achieves 111% CO2 emission reduction against SAP 10 baseline which is zero carbon emissions on the regulated energy use.

SPD Themes

Target

3. Minimising carbon footprint

3a. Whole Life Cycle Assessment (all residential development)

Bronze

Supporting References

DAS and CBG Energy Statement, M&E Feasibility Report

For Bronze ~ Ensure compliance with Policy and Building Regulations

For Silver ~

- Ensure compliance with Policy and Building Regulations including Part Z, if and when it is introduced. Discussions around reducing emissions will be required.

Applicants are encouraged to consider Whole Life Carbon (WLC) for Major Development, and methods for reducing emissions during the technical design stages.

For Gold ~

- Incorporate the findings of pre-demolition audits (where applicable) into the WLC assessment for the development,
- Applicants must commit to updating the assessments at pre commencement (Stage4) and preoccupation (Stage5/6) ensuring alignment with the targets,
- Ensure the scheme achieves the following (kgCO2e/m2GIA) scores: Embodied Carbon - Product & construction (A1 - A5) score = 675,
- Embodied Carbon - maintenance, replacement repair and end of life (B1 - 5, C1 - 4, sequestration) score = 325.

Proposal Highlight

Adaptive Reuse in Place

Together with the conservation principles adopted in the design proposal, the existing building volumes, to make 43 apartments and 2 houses, contribute towards 65% of the total provision of 69 new homes. Reusing the existing buildings minimises the equivalent embodied energy required to win and process new materials and the consequent depletion of raw materials sources as compared to new homes.

Salvage, Reuse / Recycling

The Sports Hall, Science Block, Summerhouse Workshop and portions of Main Building and Teaching Block will be demolished for implementation of the new housing. The project aims, where practicable, to salvage and recycle building materials that can have retained value, such as clay roof tiles, timber floorboards, hardwood worktops, and timber purlins.

On-site reuse of demolished materials, such as masonry/ brick face tiles can be reclaimed, crushed, and used as subbase for external works on site.

Other miscellaneous items, including workbench tops, fitted furniture, lighting, wiring and ironmongery, could be reclaimed for reuse elsewhere or recycled within the project.

Operational Embodied Energy

As stated in the DAS, the proposal is designed to minimize operational and embodied carbon energy within site constraints.

New housing will implement design measures to meet recommendations by London Energy Transformative Initiative (LETI), as set out for small-scale housing in Climate Emergency Design Guide (2020), equivalent to NHDC's SPD Gold Standard level. Low energy consumption systems are also incorporated, i.e. heat interface units for low DHW energy consumption, ASHP, Good junction design, materials with low U-value.

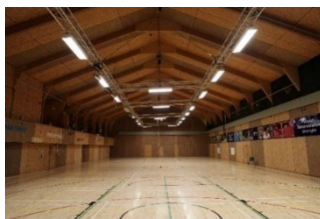
Building Services of the existing building are to be upgraded to meet relevant building regulation requirements, where possible.

Embodied Carbon Energy

In addition to optimizing opportunities for reuse, reclaim and recycling existing materials, low embodied carbon energy materials are also specified to reduce embodied carbon, i.e. brick and timber construction.

Waste Management and Recycling

Sports Hall housing and Science Block will be demolished and be replaced by the new housing cluster. As stated in the Demolition Method Statement, a demolition audit shall be carried out to maximize recycling of demolished building materials, i.e. clay tiles, bricks, wooden flooring, etc.



4. Sports Hall wooden flooring



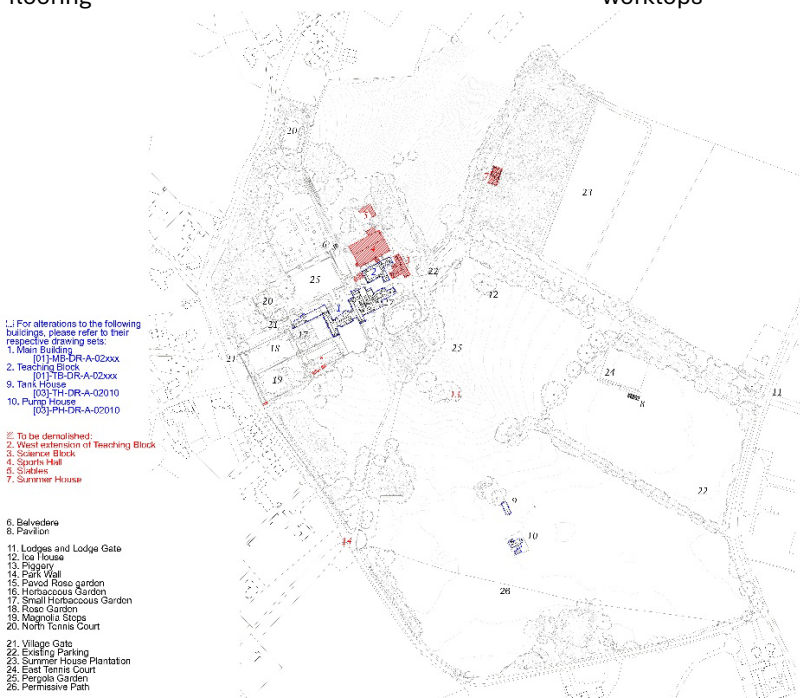
3. Science Block roof



3. Science Block worktops



7. Summerhouse workshop



Ref : 641-KS-01-XX-DR-A-10001-Demolitions Key Plan-P02

For Bronze ~ Ensure compliance with Policy and Building Regulations.

For Silver ~

1. Ensure a **pre-demolition audit** is undertaken (where applicable),
2. Ensure a **pre-redevelopment audit** is undertaken for brownfield sites,
3. Ensure **the proposal demonstrates how excavated materials will be put to beneficial use** (e.g. re-used/recycled),
4. Submit a **Circular Economy Statement** showing a waste hierarchy approach with:
 - A minimum of 30% of construction materials being of re-used materials
 - 50% of materials used are designed for re-use,
 - 80% of demolition (where applicable) waste materials (non-hazardous) are diverted from landfill for reuse/ recycling or recovery,
 - 80% of excavation waste materials are diverted from landfill for reuse,
 - 80% of construction waste materials are diverted from landfill for reuse, recycling, or
 - Recovery 80% of materials are sourced from ethical and responsible supply chains: 80% (LETI)

For Gold ~

- In addition to silver level requirements the Circular Economy Statement should also show:
 - 50% of construction materials being of re-used materials
 - 80% of materials used are designed for re-use,
 - 100% of demolition waste materials (non-hazardous) are diverted from landfill for reuse/ recycling or recovery,
 - 100% of excavation waste materials are diverted from landfill for reuse,
 - 100% of construction waste materials are diverted from landfill for reuse, recycling, or recovery,
 - 100% of materials are sourced from ethical and responsible supply chains,
 - 80% of materials used are reusable i.e. they can be disassembled and reused in future buildings (LETI)

Proposal Highlight

The project employed several circular economy principles promoted within national and local policies, i.e. maximise value of resource use and minimise waste on the environment. We have incorporated and optimising circular economy principles in the several areas:

Recycling and reusing of existing resources to minimise waste – e.g. 65% of new apartments to be place within retrofitting existing building stock, maximising reclaiming, recycling and reusing, where possible, of demolished building materials, i.e. Sports Hall and Science Block

Implementing low/ zero embodied and operational carbon products & systems to maximize building performance – e.g. new buildings are designed with low embodied carbon materials and energy efficient systems to deliver carbon neutral operational energy performance meeting the LETI Standards. EV charging parking spaces and bike stores are provided on site to encourage decarbonization of road transport by alternative mode of travel.

4. Healthy placemaking

4a. Green & Blue Infrastructure, NHS Health into Place Principles for Residential Development **Bronze+**

Supporting References

DAS and CBG Energy Statement, M&E Feasibility Report

Theme Criteria

For Bronze ~ Ensure compliance with Policy requirements and open space standards.

For Silver ~ All schemes must submit a landscaping strategy

- Ensure all schemes propose play, community amenity and food production opportunities. *Fields in Trust distances should be followed for play spaces and locations mapped with walking isochrones,*
- Green Infrastructure design should follow Natural England's Green Infrastructure Principles
- Ensure all schemes embed key aspects of healthy placemaking as outlined in the NHS Putting Health into Place guidance,
- Ensure 50% of all flat roofs are green or blue roofs
Ensure that an air quality assessment is undertaken to achieve air quality neutral (AQN) or provide justification of why AQN not possible,
- Undertake an overheating risk assessment to assess residential dwellings against CIBSE TM59 and Part O, ensuring compliance at planning stage - prioritising passive measures,
- Undertake an acoustic assessment to confirm performance against the Part O acoustic criteria for the overheating assessment. All domestic units to meet Part M4(1),
- Ensure the development scheme includes community allotments.

For Gold

In addition to silver level requirements

- Locations of play areas, amenity and food growing areas should be mapped, and character areas defined. Strategies should be included for play / food / active frontages.
- *Ensure any Green Infrastructure provision links to strategic Green Infrastructure to compliment the Nature Recovery Network (where appropriate),*
- Ensure schemes embed key aspects of healthy placemaking as outlined in the NHS Putting Health into Place guidance,
- *Ensure 100% of flat roofs are green or blue roofs.*

Proposal Highlight

The design provides a network of green spaces and features that enhances quality of life and environmental benefits for its community. There are multiple accessible permissive paths, seating areas, and healthy homes and buildings that are both energy-efficient and resilient to climate change. The design also promotes active and healthy lifestyles by incorporating amenities like a cricket pitch, tennis courts, and abundant green, walkable areas.

Green Infrastructure and Landscape Features

Reflecting the character of the site, the design integrates a variety of green spaces, including playing fields, woodlands, street trees, allotments, private gardens, green roofs, and sustainable drainage systems (SuDS). This approach aims to create a diverse landscape that supports a wide range of outdoor activities while minimizing habitat loss and preserving biodiversity.



Ref : DR-L-0001 Landscape Strategy_revP01_SCABAL

Additionally, a site-specific landscape strategy is implemented for:

- Restoring and enhancing the historic gardens around the house,
- Restoring and enhancing the orchard areas north of the house whilst establishing biodiverse meadow beneath,
- Maintaining and enhancing the parkland setting close to the house, retaining the biodiverse meadow and infilling the avenue where appropriate,
- Maintaining and enhancing the wider parkland setting, including new tree screening around the edges to soften and screen and measures to increase biodiversity of the grassland and pond areas. The setting of the restored pump and tank houses within this landscape to be in keeping with the parkland whilst providing garden areas and privacy,
- Providing sports facilities for residents and for the village in the form of a cricket field and tennis courts, with a further tennis court close to the Dower House for use by residents,
- Maintaining and enhancing woodland habitat areas, in particular for bats, ensuring that the gardens of the new houses in Summerhouse Wood are in keeping with its character and vegetation. Create drives and woodland walking routes for residents with minimal impact on habitats,
- Providing gardens within a domestic setting for the new houses that is contemporary but ties in with its surroundings,
- Providing opportunities for food production for residents without private gardens,
- Establishing a predominantly one-way system for the main drive to enhance safety,
- Providing new car parking in a setting that minimises impact on the parkland and on veteran trees,
- Recreating and celebrating historic views of the front of the house from the corner of School Lane and from the Belvedere,
- Creating a series of permitted paths to provide safe routes to the sports facilities and that link in with rights of way around the perimeter of the site,
- Minimising flood risk by use of permeable surfaces and SUDS wherever practical.

Community Benefits

The design includes dedicated spaces for food-growing, bringing people closer to nature and promoting health and well-being. These areas also serve as educational spaces where children can learn about nature and sustainable practices.

Water Management Solutions

Sustainable drainage solutions (SuDS) are incorporated, including tree pits, permeable paving, and below-ground geo-cellular storage. Additionally, blue roofs and rainwater harvesting for irrigation have been considered to further improve water management.

Health and Well-being

Signage will guide residents on plant species to encourage the use of personal planted pots around the herb gardens. Along with community food-growing spaces, these initiatives aim to inspire all residents to connect with nature.

This proposal has the potential to be a thriving urban greening residential development, leveraging nearly all types of green surface cover to establish comprehensive green infrastructure.

Biodiversity and Ecological Enhancements

Please refer to BNG report, AIA & DAS

The land use plan addresses all required elements, including the communal car park and plantation areas near Harwood and Summerhouse. Open space typologies—private, communal, and restricted public access—are clarified, along with the extent of individual residential curtilages. Each annotation specifies both land use and access type, and the legend has been amended accordingly.



Ref : 641-KS-70-XX-DR-A-11100-Site Plan Proposed Landuse-P04

Supporting References

641-KS-70-XX-DR-A-11400-Site Plan Urban Greening Factor Areas_P03

Theme Criteria

Urban Greening Factor calculation taking account of associated nature conservation, nature recovery and green infrastructure policies and standards.

For Silver ~ Ensure schemes include a multifunctional UGF calculation achieving a minimum of 0.4 (residential) along with a maintenance and management plan. *Ensure the green space attains a Green Flag score of 'Very Good'.*

For Gold ~ Ensure schemes include a multifunctional UGF calculation achieving a minimum of 0.6 (residential) along with a maintenance and management plan. *Ensure the green space attains a Green Flag score of 'Outstanding'.*

Proposal Highlight

The UGF score has been calculated according to the methodology set in out within YGF London Plan Guidance (LPA) February 2023. The design achieves a UGF score of 0.75, surpassing the minimum requirement of 0.4. The UGF score is achieved through protection and enhancement of existing vegetation within the development site including mature trees and habitats. New areas of woodland to promote species rich habitats within the development site are also being introduced to strengthen the site's ecological value. Additionally, maintaining existing orchard and proposing fruit trees, herb garden for the Temple Dinsley community. The Small Orchard, originally featuring apple trees planted in a quincunx pattern by Lutyens and celebrated by the Hertfordshire Garden Trust, will be re-established.

Urban Greening Factors considered the following ~

- Semi-natural vegetation and wetlands retained on site (including existing / mature trees),
- Semi-natural vegetation established on site,
- Native hedgerow planting (using mixed native species),
- Standard / semi-mature trees,
- Food growing, orchards and allotments,
- Mixed hedge planting (including linear planting of mature shrubs),
- Amenity shrub and ground cover planting,
- Amenity grasslands including formal lawns,
- Extensive biodiverse green roof (meets the GRO Code, may include Biosolar),
- Green facades and modular living walls,
- Wetlands and semi-natural open water,
- Partially sealed and permeable paving,
- Sealed paving (including concrete and asphalt).

To further boost biodiversity, the project features extensive green roofs designed to support various plant species. The landscape design also incorporates shrubs and ground cover planting, with a focus on enhancing visual appeal and ecological diversity. Areas of short-mown amenity grassland and formal lawns will support public health by providing spaces for children's play, and informal recreation.

See table below for project's score on Urban Greening Factors.



Ref : 641-KS-70-XX-DR-A-11400-Site Plan Urban Greening Factor Areas_P03

Urban Greening Factor:Natural England Green Infrastructure Framework

No.	Surface Cover Type	Area (m2)	Factor	Value
1	Semi-natural vegetation and wetlands retained on site (including existing / mature trees)	75,975.26	1.0	75,975.26
2	Semi-natural vegetation established on site	60,184.38	1.0	60,184.38
3	Standard / semi-mature trees (planted in connected tree pits)	0.00	0.9	0.00
4	Native hedgerow planting (using mixed native species)	562.06	0.8	449.65
5	Standard / semi-mature trees (planted in individual tree pits)	31,457.96	0.7	22,020.57
6	Food growing, orchards and allotments	3,490.87	0.7	2,443.61
7	Flower rich perennial and herbaceous planting	0.00	0.7	0.00
8	Mixed hedge planting (including linear planting of mature shrubs)	42.92	0.6	25.75
9	Amenity shrub and ground cover planting	716.53	0.5	358.27
10	Amenity grasslands including formal lawns	113,600.87	0.4	45,440.35
11	Intensive green roof (meets the Green Roof Organisation / GRO Code)	0.00	0.8	0.00
12	Extensive biodiverse green roof (meets the GRO Code, may include Biosolar)	461.41	0.7	322.99
13	Extensive green roof (meets GRO Code)	0.00	0.5	0.00
14	Extensive sedum only green roof (does not meet the GRO Code)	0.00	0.3	0.00
15	Green facades and modular living walls (rooted in soil or with irrigation)	4.75	0.5	2.38
16	Wetlands and semi-natural open water	1,387.69	1.0	1,387.69
17	Rain gardens and vegetated attenuation basins	0.00	0.7	0.00
18	Open swales and unplanted detention basins	0.00	0.5	0.00
19	Water features (unplanted and chlorinated)	0.00	0.2	0.00
20	Open aggregate and granular paving	0.00	0.2	0.00
21	Partially sealed and permeable paving	14,768.48	0.1	1,476.85
22	Sealed paving (including concrete and asphalt)	8,090.29	0.0	0.00

Total Value 210,087.74

Total Development Site Area (m2) 278,701.22

Urban Greening Factor 0.75

Fig. Table of UGF calculations for Temple Dinsley

5. Promoting biodiversity**5a. Ecological Surveys & Assessment****Silver**

Supporting References

Ecology Report

Theme Criteria

For Bronze ~

- Carry out and submit a habitat survey to enable metric baselines to be completed, including quadrat survey (where necessary) to demonstrate UK Habitats. The survey should be undertaken in line with best practice (e.g. timing and age) and identify Priority/ irreplaceable habitats (BS42020),
- A species assessment and follow-up surveys should be completed and submitted according to recommendations required to enable determination – i.e. no outstanding survey.

For Silver ~

In addition to bronze level requirements

- Ensure surveys include a review of existing sources of information such as the Hertfordshire Environmental Records Centre, MAGIC or any other appropriate resource,
- Ensure that an assessment of additional features within the site but beyond compensation for species affected is included in the species assessment.

For Gold ~

In addition to silver level requirements

- Ensure habitats are evidenced in photographs, and the local context of the site is shown in relation to features beyond the site / wider ecological networks / LNRS.

Proposal Highlight

Applied Ecology's Ecological report provides Ecological Surveys & Assessments on habitats, species and any undertaken to ensure required ecological surveys and assessments have been carried out and reported in detail in the submitted report, demonstrating the project has met Silver level of Sustainability requirements set out by NHDC.

5b. Arboriculture Assessment (where trees are impacted by proposal)**Silver**

Supporting References

SHA 1676 Temple Dinsley AIA Rev B Nov 24

Theme Criteria

For Bronze ~

- Submit a survey of all trees on site, identifying trees of value and potential impacts on offsite trees.

For Silver ~

In addition to bronze level requirements

- Retain any high value trees onsite (Category A/B or other highest value trees).

For Gold ~

- Retain all existing trees on site.

Proposal Highlight

All trees on site have been surveyed, assessed, documented with associated values, A-U, and anticipated impacts by the proposed development. Proposals have been carefully designed to minimize impact to trees, following close design team collaboration. Most trees will be retained of which a majority of high valued trees are preserved. No Category A trees are removed. Tree planting will exceed the NHDC. Tree Strategy Policy of requiring two trees for every one tree removed, including new woodland planting of a

greater species diversity than the relatively poor-quality, self-sown sycamore dominated parts of the Summerhouse Plantation. The existing landscape screens all the proposals and will be enhanced by planting which is appropriate for the biodiversity and landscape setting. The substantial net gain in tree numbers, the sensitive and historically relevant design of new planting and the greater mix of species will result in a positive arboriculture impact.

SPD Themes

5c. BNG

Target

Silver

Supporting References

BNG Report and Calculation Spreadsheet

Theme Criteria

For Bronze ~

- *Ensure the Statutory Metric or Small Sites Metric (SSM) is completed and submitted showing baseline value and demonstrate how the mitigation hierarchy has been applied,*
- *Submit a plan showing that habitat proposals achieve at least 10% BNG,*
- *Submit a Habitat Management and Monitoring Plan (HMMP)* showing how BNG significant habitats are to be managed and monitored need client's commission to AE. Provide on plot ecological enhancements to support wildlife (housing for bats, birds, bees, hedgehog holes in fences etc.)*

For Silver ~

In addition to bronze standard requirements

- *Ensure 10% BNG is achieved onsite*
- *Provide on plot ecological enhancements to support wildlife (housing for bats, birds, bees, hedgehog holes in fences etc.)*

For Gold ~

In addition to silver standard requirements

- *Submit a plan showing that 20% BNG is achieved, either all onsite or 10% onsite plus 10% offsite (e.g. contributing to the Hertfordshire LNRS).*

Proposal Highlight

With the proposed development layouts, habitat enhancement and creation measures set out in the proposal, the overall scheme would achieve an uplift in habitat units from 129.7 before Development to 151.2 after Development (+21.5 habitat units), equivalent to a +16.6% Biodiversity Net Gain (BNG) and would comply with habitat trading requirements.

Linear features would also be improved from 17.1 hedgerow units before Development to 21.5 hedgerow units after Development (+2.2 hedgerow units), equivalent to a +12.8% BNG for hedgerows.

5d. Ecological buffers**Gold**

Supporting References

Ecology Report

Theme Criteria

For Bronze ~

- *Ensure the scheme takes account of Natural England's Standing Advice for **ancient woodland and veteran trees to provide a 15m buffer in these areas (not applicable as per AEL)***
- *Ensure the scheme includes a 12m buffers for SSSIs.*
- *Ensure the scheme includes 10m riparian zone buffer alongside watercourses, where applicable.*

For Silver ~*In addition to bronze standard requirements*

- *Ensure the scheme includes a 12m buffer adjacent to LWS and species rich hedgerows.*

For Gold ~*In addition to silver standard requirements*

- *Ensure the scheme includes enhancements to national and/or local sites and other habitats seeking to limit impacts of development and positively contribute to existing habitats.*

The revised design of the walled parking garden, East Car Park, significantly simplifies the whole in relation to the veteran trees, pulling parking spaces away from the Ice House trees (T171) to create a minimum 12m radius buffer with no development within, and moving the Central Bin Store and the Energy Centre away from the large Oak (T119) near the entrance to create a 21m radius buffer with no new development within.

6. Sustainable travel**6a. Transport statements, assessments and travel plans****Bronze**

Supporting References

Transport Assessment, Travel Plan

Theme Criteria

For Bronze ~

- *Submit a Transport statement and travel plan clearly demonstrating how the scheme will facilitate sustainable transport and encourage active travel– see Transport Assessment,*
- *Ensure the scheme includes segregated cycle ways, pedestrian paths away from traffic and integrated with green infrastructure.*

For Silver ~

In addition to bronze level requirements:

- *Ensure the transport statement/ travel plan seeks to achieve 50% of local trips (under 5 miles) by active travel by for example:*
- *Including proposals/ financial contributions for off-site upgrades to walking and cycling infrastructure creating safe, continuous routes to schools and key destinations,*
- *Including proposals/ financial contributions to enhance/ provide additional local bus services serving the development and its environs.*

For Gold ~

In addition to silver level requirements:

- *Ensure the transport statement/ travel plan seeks to achieve 50% of all trips by sustainable modes, by including, for example:*
 - *Car clubs,*
 - *Ride sharing schemes,*
 - *Community transport schemes,*
 - *Cycle hire schemes.*

Proposal Highlight

The travel plan has outlined a general strategy of optimising existing infrastructure for travelling by foot, cycling and public transport. The new proposal has also provided active travel facilities, such as bike stores for each new dwelling to encourage alternative modes of transportation. The proposals would be expected to result in a significant decrease in vehicle movements during both the network peak hours, as well as through the course of the day. Modal share of cars is also expected to be reduced by 8.4% while active travel modals (walking and cycling) are expected to be increased by 5.5% over 5 years. Formalisation and improvement to the existing pedestrian access, located to the west of the main buildings, is proposed. This will offer future residents a separate vehicle-free access into the site and direct connection to the centre of Preston village. Further to this, a new internal footpath is proposed, linking the Dower House development, located to the north of the site, to the new pedestrian access at village gate.

Supporting References
Transport Assessment

Theme Criteria

For Bronze ~

- *Ensure compliance with Policy and the Building Regs Part S*

For Silver ~

In addition to bronze level requirements

- *Provide one active EV charging point (EVCP) per dwelling, rated 7kW (minimum),*
- *Provide at least one EV charging point at each mobility hub and destination location (e.g. community hall, parade of shops, sports facilities etc.), rated 7kW (minimum),*
- *Provide one EV charging point per 200 dwellings for a car club, disabled visitor, and other visitor use, evenly distributed throughout the site, rated 7kW (minimum).*

For Gold ~

In addition to silver level requirements

- *Ensure EV charging points at mobility hubs and destination locations are rated 22kW or higher,*
- *Ensure passive provision for an additional EV charging point per 200 dwellings for car clubs and visitor use.*

Proposal Highlight

105 car park spaces will be provided **with EV charging provisions** as distributed below:

Summerhouse Plantation

~ New residential building (S1&44D) – at least 1 no./ dwelling unit

- Summerhouse: 1 no. parking space with EV direct charge points & 2 nos. parking spaces with cable route.
- Harwood house: 1 no. parking space with EV direct charge points & 2 nos. parking spaces with cable route.

Sports Hall Housing

~ New residential building (S1&44D) – at least 1 no./ dwelling unit

- 22 nos. parking space with direct charge points.
- 22 nos. parking spaces with cable route.

Main Building Apartments

~ Dwelling resulting from material change of use (S2& 44E) – minimum required = no. of newly created dwellings that the carpark serves

- 43 nos. parking space with direct charge points in East Car Park (see AD S2.2,2.3-2.6),
- 12 nos. parking spaces with cable route in East Car Park.

For further details, refer to Transport Assessment.

Supporting References

Energy Statement

Theme Criteria

For Bronze ~*Ensure compliance with Policy requirements of 110 lpppd***For Silver ~***Ensure that water consumption can meet the target of < 95 lpppd (RIBA 2025 Climate Challenge)****For Gold ~** Ensure that water consumption can meet the target of < 75 lpppd (RIBA 2030 Climate Challenge)*

Proposal Highlight

*The design aims to achieve water consumption level meeting the RIBA 2025 Climate Challenge, i.e. < 95lpppd. Part G calculation will be required to be carried out.**To achieve the target, water saving strategies will be implemented to existing and new design proposal to conserves water, including:*

- *Rainwater Harvesting,*
- *Greywater reuse,*
- *Aerated washbasin/ kitchen taps and shower heads,*
- *Tapered and low-capacity baths,*
- *Sensor and low flush toilets,*
- *Water efficient white goods and appliances, e.g., washing machines and dishwashers,*
- *Low-flow taps limiting hot water consumption, (product to be specified during RIBA Stage 4).*

Water saving strategies during construction also includes:

- *Close-loop wheel washers,*
- *Waterless wheel washing using angled steel grids to remove debris,*
- *High pressure low volume power hoses,*
- *Recirculating water where possible,*
- *Limited the water use for flushing building services by stopping it as soon as flush water is clear,*
- *Employing a regime for monitoring water use and water waste.*

*Provisions of rainwater harvesting systems will be incorporated where required, detailed strategies to be provided after **Part G calculations at RIBA Stage 4.***

Supporting References

Flood Risk Assessment & SuDS Report

Theme Criteria

For Bronze ~

- *Submit a SuDS strategy and maintenance plan approved by SAB ensuring that surface water run-off is managed as close to its source as possible, and the scheme will not increase downstream flood risk. Strategy to include a climate change allowance*
- *Ensure that discharge to a combined sewer is avoided unless all other discharge options (infiltration, watercourse, surface water sewer) have been exhausted first, as per the discharge hierarchy*
- *Ensure that the scheme achieves greenfield run-off rates unless this is demonstrably not feasible in which case a minimum of 50% reduction will be required. Brownfield sites will need to achieve run-off rates as close to greenfield as possible.*

For Silver ~ *In addition to bronze level requirements*

- *Ensure the SuDS strategy is in accordance with DEFRA's non-statutory SuDS technical standards,*
- *Ensure the SuDS strategy also addresses the 4 pillars of SuDS. The scheme must also include SuDS planters, tree pits and rain gardens.*
- *Ensure the scheme achieves Wst 05 BREEAM credit*

For Gold ~ *In addition to silver level requirements:*

- *Ensure the scheme achieves better than greenfield (pre-development) runoff rates,*
- *Ensure that the scheme does not discharge to combined sewers,*
- *Ensure the scheme achieves Wst 05 Exemplary BREEAM credit.*

Proposal Highlight

Surface runoff management strategies are incorporated in both existing and new buildings. Existing main building and teaching block provides surface drainage via series of manholes and surface water sewers. While Teaching Block and proposed buildings to the north will utilise a combination of Raingarden Planters, Lined Permeable Paving and below ground Cellar Storage Tanks to meet SuDS Design Pillars, i.e. Water Quantity, Water Quality, Amenity and Biodiversity.

The Flood Risk Assessment (FRA) has also demonstrated that the proposed SuDS offers 96% of reduction on brownfield runoff rates, which exceeds beyond the minimum reduction rate of 50%.

For more details, refer to the Flood Risk Assessment & SuDS Report.

Supporting References

Sustainability SPD - Appendix A

Proposal Highlight

To maximize energy efficiency and low carbon heating improvements to existing buildings, the proposal has applied principles and strategies from the Responsible Retrofit Guidance Wheel developed by Sustainable Traditional Buildings Alliance (STBA). Main areas of improvement targets are done through strategies such as improved insulation and airtightness, as well as eliminating unnecessary gaps (e.g. draught-proofing windows, /floor/ doors, skirting boards, ceiling and flues) of the existing building fabrics.

Below is a summary of sustainability strategies proposed to be applied when retrofitting different areas and components of existing buildings. Specific measures to be implemented shall refer to Appendix A of this document.

Walls

Existing cavity walls with insulation, internal walls, uninsulated cavity walls and solid walls will be insulated accordingly to meet statutory energy efficiency requirements.

Roof

Insulation to loft hatches, loft, rafters, flat roofs, room in roofs shall be added as described to meet statutory energy efficiency requirements.

Floor

Insulation to be added to areas between and under floor joists, between joist or under soffits of any exposed soffits to upper floors. Existing ground floor to be replaced with new concrete insulated solid ground floor.

Windows

Window sashes and casement windows to be retained shall be draught proofed with specific procedures (refer to Appendix A), energy efficient glazing shall be replaced at locations as specified. Existing windows and window shutters are to be refurbished accordingly.

Doors

Existing doors should be draughtproofed where appropriate. Where new doors are specified, high performance doors with double and triple glazed units will be installed. Depending on the individual conditions of existing external doors, where appropriate, should be refurbished to improve thermal performance.

Chimney

Chimneys shall be capped and ventilated appropriately. Some stacks may be adopted for mechanical ventilation systems. Reduction of air flow performed by background ventilation strategies.

Electricity

Photovoltaics are located to the Southeast of Stable Block and integral with East Car Park proposal.

Heat Generation

To retain historic heaters as part of panelling design, existing heating system will be refurbished and integrated with new heating system. Air source heat pumps and communal heat generating systems are proposed to minimize impact on existing fabric while providing necessary heating for proposed apartments.

Hot Water Storage

Cylinder thermostats allow hot water temperature to be customized by individual apartments according to their needs, which reduces energy waste. New and insulated cylinder provisions are also sized accordingly to apartment sizes to reduce unnecessary heat/energy loss.

Heating Distribution

Wet under-floor heating system with individual temperature control will be incorporated at locations as described in Appendix A.

Lighting

Energy efficient lighting will be incorporated into new systems and arrangements.

Ventilation

Background ventilators and intermittent extract fans at strategic locations are integrated to minimise visual impact of the historic elevations and fabric, while providing appropriate level of ventilation. Energy loss is further reduced by closing and sealing off unnecessary openings. Passive stack ventilation strategies are incorporated into existing chimney stacks in the Main Building and Tank House to reduce demand on mechanical ventilation.

People Interaction

Measures such as user-friendly interfaces of controls for energy systems within Individual Apartments, provision of simple and clear information about installed systems, and strategies to boost user interest and involvement in maintaining efficiency of building systems are outlined in Appendix A. Implementation of service charges for shared building elements and footprint shall ensure efficient use of energy use in shared spaces. Post occupancy evaluation can also be carried out for feedback.