

The Sizewell C Project

8.1 Main Development Site Design and Access Statement Second Addendum

May 2021

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Revision: 1.0

Applicable Regulation: Regulation 5(2)(o)

PINS Reference Number: EN010012







Chapter 5

Design Principles - Framework for Good Design

5.0 Design Principles

"[Design] Principles should act as reminders to the delivery organisation, a steer in the right direction, and a means of restoring focus to the big picture.....Design Principles should be a point of departure, setting out a common understanding [of] the issues to be addressed."

Developing Design Principles for National Infrastructure (NIC, 2018)

Design Principles - Framework for Good Design

- The evolution and application of the design principles set out in this chapter align with the core purposes and ambitions of the National Infrastructure Commission design principles. They have been informed by the site context, project requirements and consultation feedback, which are described in Chapters 2 to 4 of this document.
- The design principles have been informed through design review by CABE at Design Council undertaken in March 2014 and November 2019. Further details are provided in Chapter 4 and Appendix B of this statement.
- The design principles have also been informed by consultation with the relevant local authorities (SCC and ESC, formerly Suffolk Coastal District Council (SCDC)) and Natural England during the early stages of the design process.
- The design brief established with stakeholders in 2014, has heavily informed the design process and forms the basis of many design principles contained within this chapter.
- Collectively, the design principles help to define and establish how the project will fulfil the criteria of 'good design', set out in Overarching National Policy Statement for Energy (EN-1) (NPS EN-1) (Ref 7.3) and NPS EN-6 (Ref 7.4).

"Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible."

- The design principles are split into two categories as set out in
 - Overarching Design Principles: detailed designs submitted and approved in this application have been informed by the overarching design principles. Alternative designs, or where details have not yet been submitted to the local planning authority for approval, will be informed by the overarching design principles, but they do not control the project.
 - Detailed Design Principles: detailed designs submitted and approved in this application must be carried out in accordance with these design principles. Alternative designs, or where details have not yet been submitted to the local planning authority for approval, must be in general accordance with these design principles. The detailed design principles are sub-divided into those within the main platform and those beyond the main platform as set out in Figure 5.1 and 5.3. Further details are set out below.
- This Design and Access Statement will be a certified document. which means it controls delivery of the project. The specific parts of this chapter that control the project are the detailed design principles contained within Tables 5.2 and 5.3.
- Further details on the specific functions the detailed design principles perform are set out in Section 1.3 of this document.
- Table 5.1 provides the Overarching Design Principles. Tables 5.2 and 5.3 provide the Detailed Design Principles.

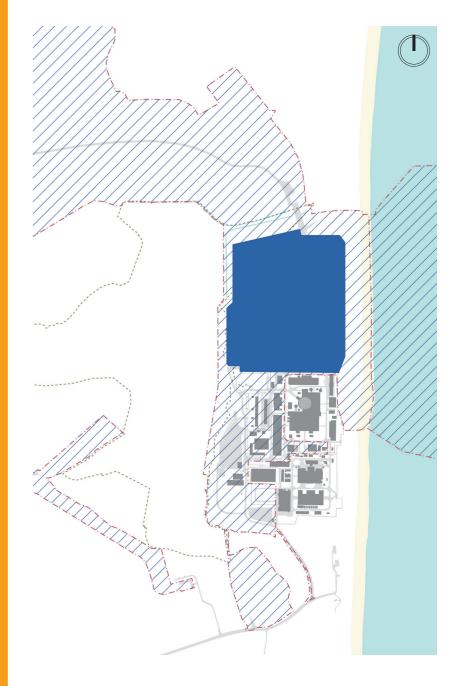


Figure 5.1: Sizewell C main platform extents

Legend



Within Sizewell C main platform



Beyond Sizewell C main platform

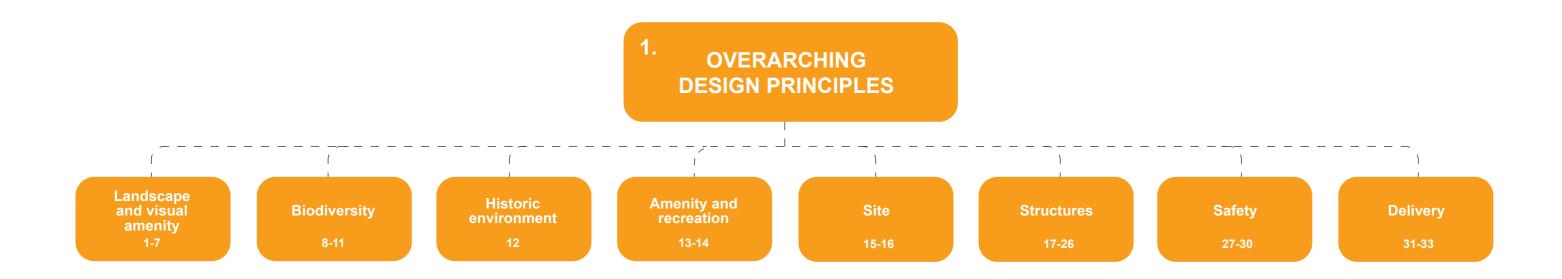




Figure 5.2: Diagram to show organisation of the design principles

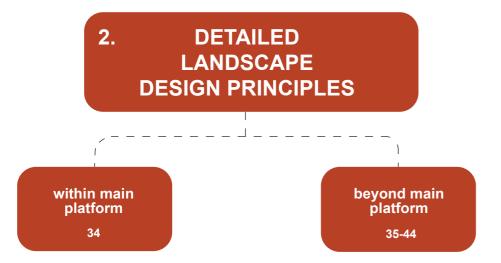
Table 5.1 Overarching Design Principles

1. OVERARCHING DESIGN PRINCIPLES			
LANDSCAPE & VISUAL AMENITY			
1	Minimise land take and mitigate landscape and visual effects where practical.		
2	Retain existing screening landscape features, where reasonably practicable, and promote appropriate new landscape design (planting and landform) to mitigate the landscape and visual effects of the development.		
3	Establish new planting and landform at the earliest practicable opportunity.		
4	Plan the development and design of structures to respect the rural and in part wilderness character of the landscape.		
5	Select finishes (materials, colour and texture) to be sympathetic to local landscape and seascape and built context, where reasonably practicable		
6	Design associated infrastructure, including lighting, access and fencing, to minimise, where reasonably practicable, landscape, seascape and visual effects.		
7	Minimise, where reasonably practicable, visual effects at night from lighting and light spill without compromising either safety or security.		
BIODIVERSITY			
8	Minimise the likely significant adverse biodiversity effects and seek opportunities post construction through retention of existing habitats, where reasonably practicable, and creation of new habitats.		
9	Seek to retain areas of habitat connectivity and continuity as far as possible		
10	Design the development, including lighting, access and fencing, to minimise disturbance to protected species, including at night, and severance of habitats, where reasonably practicable.		
11	Minimise land take from the SSSI.		
HISTORIC ENVIRONMENT			
12	The design of the development will consider potential effects on designated and non-designated heritage assets, including buried archaeology and historic landscape character.		
AMENITY & RECREATION			
13	Create and maintain safe public access (pedestrian, equestrian, cycle), integrated with existing networks, where reasonably practicable.		
14	Ensure that facilities for public use and enjoyment take into account the balance of other considerations including landscape character, the historic environment and ecology.		
SITE			
15	The development will incorporate proportionate security provisions in accordance with ONR requirements and SZC Co. standards.		
16	Permanent access to and within the site will meet all operational requirements.		

1. OVERARCHING DESIGN PRINCIPLES (CONT.) **STRUCTURES** 17 Sizewell C will be an efficient and well-ordered facility. It will provide visible reassurance of a properly functioning and safe site, considerate of the area of environmental sensitivity. 18 Sizewell C structures will complement the existing structures within the landscape, most notably Sizewell A and B, as far as reasonably practicable. 19 Design will be a planned composition with Sizewell A and Sizewell B, balancing proportions and impacts across the sites, as far as reasonably practicable. 20 The power station will be a masterplanned composition as far as reasonably practicable, and not an unplanned series of individual buildings and structures. 21 Design will utilise techniques to reduce the perceived scale of buildings from a distance by manipulating the size and arrangement of visible components and façade details, subject to operational requirements. 22 The crucial differences between the Sizewell C UK EPR™ and Sizewell B will be recognised, including the consequent impacts upon form, construction, materials and appearance. 23 Building finishes will be durable, low maintenance and suitable for a marine environment. Subject to project requirements, visibility from public viewpoints and good masterplanning, where possible, the built forms of Sizewell C will generally be treated with an external colour palette that is responsive to and will aim to 24 form an integrated part of the natural landscape they sit within. 25 SZC Co. will provide a high-quality workplace for the entire power station workforce. 26 New buildings located outside the main Sizewell C platform will be responsive to their individual local context whilst maintaining a coordinated high-quality approach to the whole development. **SAFETY** 27 Sizewell C will be designed to comply with regulatory requirements namely the outcome of the UK EPR™ GDA. 28 The proposed design will ensure that the power station can be constructed safely. 29 Detailed design will ensure the power station can be operated and maintained safely in accordance with the Nuclear Site Licence and other applicable regulations and consents. 30 The power station site and structures will consider safe decommissioning as part of the design **DELIVERY** 31 Detailed design will maintain the commercial viability of the project and will not delay the assumed construction programme. 32 Detailed designs approved for Hinkley Point C power station will be replicated wherever practicable to avoid redesign costs and ensure consistency of the operational and maintenance regime.

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SZC Co. will continue to be dedicated to good design for the Sizewell C development.



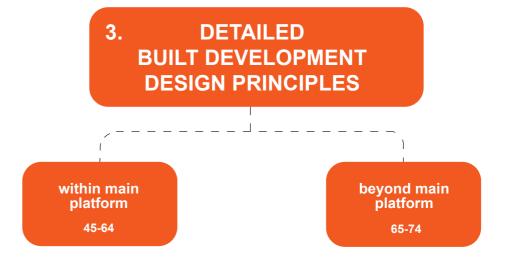


Table 5.2 Detailed Landscape Design Principles

2. DETAILED LANDSCAPE DESIGN PRINCIPLES

WITHIN MAIN PLATFORM

Landscape design will provide character to those external areas and routes within the main platform that are used most intensively by workers on foot.

BEYOND MAIN PLATFORM

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- Land within the main development site required for operation of the power station will be optimised and disturbance will be minimised to as small an area of the landscape as reasonably practicable.
- Wherever practicable, existing established plantation woodlands and tree belts will be retained where they contribute to the layers of vegetation that screen views to the power station.
 - Existing retained features, such as woodlands, forested areas and hedgerows will form part of the landscape design.
- Mature screening, will exploit the existing woodland at Goose Hill and Sizewell Belts to retain and complement the architectural composition of the existing power station with the new Sizewell C structures.
- New planting and landforms will be established at the earliest practicable opportunity.
- 40 Landscape design will create a diversity of conditions that will provide subtle variation in grassland habitats allowing a diverse flora to establish, reflecting the floristic diversity of existing Suffolk Sandlings dry grasslands.
- Any public rights of way, permissive footpaths, access land, promoted cycle routes and all other pre-existing linear and area access (outside the power station complex, on the coast and inland) affected by construction will be restored to at least their original standard and alignment.
- 42 Facilities for public use and enjoyment will have regard to landscape character, the historic environment and biodiversity.
- Existing habitats and habitat connectivity will be retained where reasonably practicable and new habitats will be created.
- Disturbance to protected species and severance of habitats will be minimised, where reasonably practicable.

Table 5.3 Detailed Built Development Principles

3. DETAILED BUILT DEVELOPMENT PRINCIPLES WITHIN MAIN PLATFORM 45 The influence of the future form and appearance of Sizewell A will be considered in detailed designs, as far as reasonably practicable. 46 A sense of place and community for the workplace will be created on the main platform. Placemaking 47 Workforce buildings, occupied by large numbers of staff, will respond to occupants' needs for access, daylight, shading and ventilation. The principal Sizewell C structures will be located in close east-west alignment with the Sizewell B dome and continue the existing axis of Sizewell structures to replicate the 'behaviour' of them 48 in views as platonic geometric forms above a vegetated datum. 49 Eastern facades on the main platform will generally be formed of solid components without glazed openings to reduce light spill. The external lighting design will respond to the maintenance and security brief but where practicable will minimise light spill beyond the perimeter of the power station site, particularly on the 50 Lighting & light spill eastern side of the platform. 51 Security systems and lighting will be integrated, evenly set-out and applied consistently to all facades to reduce the appearance of visual clutter as far as reasonably practicable. Subject to operational requirements, all roof level plant equipment and protrusions will be concealed behind a raised building parapet as far as is reasonably practicable. Roof parapets will be 52 of a generally consistent design and detail across site structures. A bespoke design will be considered for particularly prominent parapets. Roof plant and ancillary structures The need for permanent access systems, railings and other secondary structures attached to buildings will be minimised and, where visible from public viewpoints, will maintain a coordinated 53 approach, where reasonably practicable. The arrangement of the turbine halls on the north-south axis of the site will be spaced symmetrically within the immediate foreground of the nuclear island buildings to provide clear separation 54 of the volumes. Turbine halls / operational The turbine halls and operational service centre will comprise a formal set-piece with a consistent material finish. The silhouette of these structures would be identifiable as a clean simple service centre 55 profile from coastal views. The turbine halls cladding will seek to provide a responsive surface treatment which changes in colour and tone, subject to surrounding lighting and climatic conditions. The colour palette shall 56 be discussed and agreed with East Suffolk Council and shall include details of the manufacturer's maintenance specification for external facing cladding. The external treatment of the interim spent fuel store will seek to comprise a simple form with minimal external projections and a colour which responds to its setting as far as is reasonably 57 practicable, taking into account the operational and nuclear safety requirements of the building. Reserved Matters applications shall include details of the available colour options, including an Interim spent fuel store explanation of how the proposed colour choice has responded to the building's setting. The treatment of ancillary and plant buildings within the main platform will seek to comprise pure simple, orthogonal forms and will minimise external projections and add-ons as far as 58 reasonably practicable Ancillary and plant buildings 59 Ancillary and plant buildings will have a consistent façade treatment, comprising a visually recessive colour as far as reasonably practicable.

3. DETAILED BUILT DEVELOPMENT PRINCIPLES (CONT.)			
	60	All materials will be specified in accordance with the operational and performance requirements for the structure and its constituent components.	
	61	There will be a unifying design approach to provide architectural continuity between each of the three material groups. The three main material groups will be: • nuclear island, cooling water pumphouse and associated buildings - concrete structures;	
Building finishes		 conventional island primary structures (turbine halls and operational service centre) - anodised aluminium cladding panels and glass-fibre reinforced concrete plinth or similar; and ancillary and plant buildings – majority of which will be profiled sheet metal cladding or similar, subject to operational requirements. 	
	62	The structural concrete of the safety related buildings will be exposed, without additional finishes and will be easily accessible without obstruction for ease of maintenance and inspection, in accordance with operational requirements.	
	63	Exposed concrete will have a consistent pale grey finish as far as reasonably practicable. Careful on-site attention will be given to the change in batch of aggregates and setting-out of day joints to ensure a consistent even finish can be achieved, subject to operational requirements.	
	64	The reactor stack will be a recessive colour appropriate to the backdrop of sky that it will be visible against. The colour palette shall be discussed and agreed with East Suffolk Council.	
BEYOND MAIN PLATFORM			
	65	Peripheral buildings that fall outside of the main platform will be treated with an understated external aesthetic which serves to root them in their environment.	
Placemaking	66	Designs for built forms will respond to the 'wilderness quality' of the power station environment by reducing the appearance of human habitation, through reduced human scale openings and external fixtures being visible from coastal views as far as reasonably practicable and within operational requirements.	
	67	The material palette for the peripheral buildings will make use of colour tones appropriate to the surrounding landscape and in keeping with the development proposals on the main platform.	
	68	A power station access road will be provided to the B1122 (Abbey Road) from the north-west of the main platform, which will take into account the surrounding environment.	
	69	The access road will be reduced in width post-construction and the surrounding landscape will be reprofiled to create naturalistic landforms covered with Sandlings grassland and pockets of mixed scrub, heath and stands of trees. This area will be designed to also integrate the SSSI crossing into the local landscape and screen / filter views to moving vehicles.	
Access and parking	70	A second independent access point to the power station will be provided, for security purposes.	
	71	Access to the main platform will be provided for workers on foot and by cycle.	
	72	The Sizewell B outage car park at Pillbox Field will be located and designed to minimise, as far as practicable, its visibility and vehicles using it, deploying sensitive reprofiling of landform working with existing topography.	
	73	The design of the coastal defences will be given careful consideration to control the views to the operational site buildings, with a view to minimising visibility of smaller buildings and structures.	
Coastal defences	74	The coastal defences will be planted with appropriate species to integrate the new defensive structure into its sensitive coastal landscape and enhance screening over time.	