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## P2001647 - Brighton 3Ts

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## Document Revision Record

Rev	Section	Description	Author	Checked	Date
F01	All	First issue	Meeta Mistry	Katharine Blankley	09.09.2011
F02	Landscape	Landscape section and specifications (1.3, 1.5) updated to match planning submission, pages 26-32 removed, reference to artists removed	Tracey Parker	Henry Mead	11.10.2011
	Appendices	Appendices updated, section 2.1, pages 182-184, to include bespoke timber handrail and crashrail.	Katharine Blankley	Katharine Blankley	18.10.2011
F03	Landscape	Appendices updated, section 1.1 Landscape Masterplan Drawing BDP-LS-SW-A00-PL-ZZ-0001 replaced.	Tracey Parker	Henry Mead	25.10.2011
F04	Landscape	Updated following meetings with BHCC on Highways (Eastern Rd. and Bristol Gate revised) and Ecology (species rich grass replaces synthetic turf) and to include mitigation measures from Wind Assessment (Windbreak planting added to E. side Bristol Gate and on N. side of exit from underground car park).	Tracey Parker	Henry Mead	14.12.2011

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This document contains the overall design intent vision for Brighton 3T's Hospital setting new standards for healthcare and clinical services

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- appendices





# 1 | landscape

This section covers the

- Overall landscape strategy
- Landscape design overview
- Eastern road frontage
- Service road and service yard
- Level 1 courtyards
- Level 2 (upper abbey road frontage)
- Level 4 terrace stage 1
- Level 6 roof garden stage 2
- Level 6 cafe terrace stage 1
- Level 8 green roof stage 1
- Level 10 inpatient rehab garden stage 1
- Level 11 terraces stage 1
- Arts integration
- Hard landscape and furniture
- Planting
- Soft landscape-roof terraces, coastal
- Landscape maintenance
- Safety and security

## Introduction

This document has been prepared for the Trust for the Step 3 'Linking with the Outside' design process. The current revision of this document includes proposals for the hospital's external spaces based on comments received following the initial design workshop held on 20th May 2011 and presented at the Final 'Wrap-Up' workshop on 12th August 2011.

In view of the absence of any major comments on the proposals at the 'Wrap-Up' workshop, the proposals contained in this document are largely unchanged from those presented at the workshop. These proposals will therefore form the basis of the scheme for the external areas proceeding onto the detail design stages.

Responses by the design team to specific issues raised at the 20-05-11 workshop are contained in the document BDP-LS-SW-MI-0001

## Overall Design Strategy

### Reference to Policy Documents

The landscape design has taken as a reference the following documents:

Trust's 'Design Philosophy Brief':  
The following issues from this brief have particular relevance to the landscape design of the 3Ts hospital role of the hospital's external spaces in helping to counteract negative feelings (e.g. anxiety, fear, vulnerability) and to enhance positive feelings (e.g. relaxation, feeling of well-being) commonly experienced by patients, and to offset the clinical character of the hospital's interior environment. use of natural materials and finishes that symbolise a connection to nature and reflect current national and local issues on the environment and sustainability reflect Brighton's heritage as a therapeutic destination for 'taking the air', and as a creative city through the collaboration with artists in the design of the courtyards and roof terraces encourage public access to open spaces within the hospital while developing the design of other external areas for specific user groups.

Trust's 'Terrace and Roof Garden Design Policy':  
This document has provided important references to the research on gardens in healthcare buildings, to the potential risks associated with outdoors spaces, to the specific user needs and functions of the roof gardens and terraces, and to the general design requirements of these spaces. These issues have been carried through to the design proposals of the 3Ts external spaces.

Trust's DOP 'Inpatients Gardens Outside Rehab Spaces':  
Advice on the features required for the rehabilitation on patients using the Level 10 roof terrace of Stage 1 and the patient's garden of the Level 6 Roof Garden are contained in this document.

### Importance of Outdoor Spaces

#### in Hospital Environments

The positive benefits of access to the outdoor environments of hospitals have been documented in a number of research projects. For patients and visitors it has been shown that views and access to garden areas and the calming views of nature can reduce stress, provide an important escape from the clinical setting and aid patient recovery. It has also been found that garden spaces are valued by healthcare workers, help them recuperate from stress and are used as a place to escape from hospital environments.

The benefits that can be derived from direct access to outdoor environments have formed a central design element of the 3Ts proposals. Within a constrained city site the majority of outdoor spaces will take the form of roof gardens and roof terraces of varying sizes.

The level of access to these outdoor spaces will vary. Some spaces (the Level 6 Roof Garden and the civic space of the Eastern Rd. frontage for example) will have unrestricted access by the public, while other spaces will be restricted solely to patients (e.g. Stage 1 Level 10 Inpatient Rehab Garden, Stage 2 Level 4 Balcony, Stage 2 Level 6 Patients Garden) or staff (Stage 1 Level 11 terraces). Other areas will be inaccessible to all except for maintenance (Level 8 roof terrace, Level 2 Upper Abbey Road Frontage, service yard roof), though they serve an important function in enhancing the sustainability of the project and in providing a pleasant prospect in overlooking views.

The restrictions on access to the Level 8 and the green roof of Level 4/St 1 has been governed by the limited levels of surveillance of these areas. The Level 8 terrace is surrounded by single bed wards with no access from public areas, and the inaccessible west end of the Level 4 terrace lacks access or an outlook from communal areas.

### Accessibility of outdoor spaces

Location of outdoor space	Access by
Level 1 Courtyards.....	- Unrestricted access
Level 2 (U. Abbey Rd Frontage).....	- Maintenance Staff only
Level 4 Terrace (Stage 1).....	- West side: Maintenance access only, East side: Imaging waiting room patients, hospital staff
Level 6 Roof Garden (Stage 2).....	- West side and East side (front) - public access, East side (rear) - patients only
Level 6 Cafe Terrace (Stage 1).....	- Unrestricted access
Level 8 Green Roof (Stage 1).....	- Maintenance access only
Level 10 Inpatient Rehab Garden (Stage 1)....	- Inpatients (Stage 1 wards), Neuro and Stroke Rehab
Level 11 Terraces (Stage 1).....	- West side: staff using Meeting & Teaching Suite; East side (rear) Junior Doctors; East side (front) maintenance only

## Overall Design Strategy (cont.)



LKH Universitätsklinikum, Graz, Austria



John Radcliffe Hospital



St Thomas's Hospital



Luke's International Hospital, Tokyo



St Louis Children's Hospital



Great Ormond Street Hospital



St Louis Children's Hospital



Schwab Rehabilitation Hospital

## Precedents of Roof Gardens in Hospital Design

The last few decades have seen a substantial expansion in the inclusion of roof gardens in new buildings as the environmental benefits of these features has become recognised. This has led to a growth in research and availability of construction techniques that can ensure that the reliable construction and sustainability of roof gardens can be achieved. Research into creating long term flourishing areas of planting on roof gardens has also progressed in the work of Nigel Dunnett at Sheffield University and others.

There are now a number of precedents of the integration of roof gardens into the design of hospital buildings of which the following is a selection:

- Great Ormond Street Hospital, London: Staff Roof Garden
- St Thomas's Hospital, London: Podium Garden over car park
- John Radcliffe Hospital, Oxford: Sensory Roof Garden
- Schwab Rehabilitation Hospital, Chicago: Roof Top Garden
- Luke's International Hospital, Tokyo: Roof Garden
- St. Louis Children's Hospital: Roof Garden



Smilow Cancer Hospital

## Overall Design Strategy

(cont.)

### Design Constraints

The design of roof gardens and terraces within any building project is subject to a number constraints, and a hospital building presents the designer with additional constraints.

**Wind Constraint:** This impacts on the need to create a comfortable environment in above ground level outdoor spaces for the users of these spaces. Ensuring that the correct level of shelter is created for the long-term survival of plants is an additional consideration in the creation of roof gardens and goes hand-in-hand with the selection of plants that can tolerate windy conditions.

**Coastal Environment Constraint:** The selection of plant species that can tolerate these climatic conditions is an essential part of successful planting design

**Shade Constraint:** This is an additional constraint in matching the correct plant species to the specific microclimatic conditions of courtyard and roof terrace areas throughout the hospital building

**Depth of Compost Constraint:** The depth of compost that can be supported on roof gardens is generally less than that would be provided in planted areas created at ground level. The result is that the compost is prone to dry out more quickly requiring more frequent watering of planted areas. The limited depth also results in restrictions on the location of large shrub species and small trees to areas where there is space to mound up depths of compost.

**Services Constraint:** There are instances where the routing of electrical and mechanical services across courtyards and roof terraces cannot be avoided. In these instances it is necessary to integrate these features into the design of the landscape.

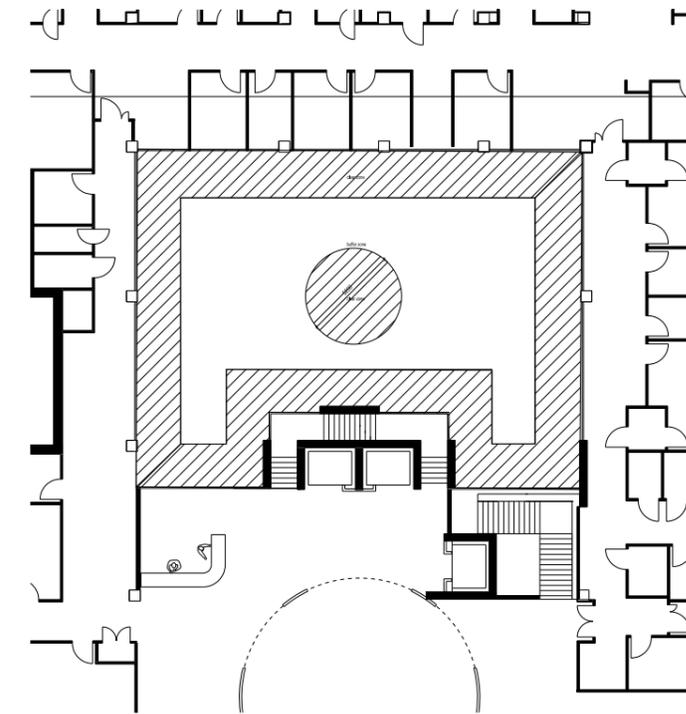
**Safety Constraint:** The accessibility of above ground level outdoor spaces present many potential risks to users that can be assessed and mitigated.

**Building Maintenance Constraint:** Many of the courtyards and roof terraces need to accommodate MEWP's (mechanical elevated working platform), cradle platforms and working space for window cleaning by 'reach and clean' operatives.

**Loading Constraint:** As well as the depth of compost and mature size of plants and trees, structural loadings place limits on the features and the range of paving types that can be incorporated into the designs of roof terraces

**Landscape Maintenance Constraint:** Access to many of the roof terraces will be through sensitive hospital areas which will require management. In these areas the use of grass, and annual and perennial plants needs to be carefully considered.

**Infection Control:** Outdoor spaces will need to ensure infection risks are minimised and Trust infection control standards are met.



Level 1 (St 2) Courtyard showing areas (hatched) needed for access by MEWP and pole-fed cleaning operatives



Level 1 (St 2) Courtyard showing areas (hatched) needed for access by MEWP and pole-fed cleaning operatives

## Overall Design Strategy

(cont.)

### Design Aims for healing environments.

- Functionality is imperative because the landscape needs to accommodate the limitations of the users of the space.
- The landscape design must be maintainable both for physical safety and therapeutic benefits. At institutions such as hospitals, it is especially important that the external areas be easy to maintain because a poorly maintained space could make patients lose confidence that they are being well taken care of by hospital staff.
- If the landscape isn't environmentally sound, it could be detrimental to the users of the space, especially those who are physically unwell. Patient safety must be maintained in outdoor spaces, with appropriate infection control measures in place.
- Is it important that the landscape design is value for money and cost effective to maintain.
- Evolve a design that is rooted in the local environment with references to local landscapes
- Create a haven for patients, staff and visitors away from the clinically and technologically-based internal hospital environment.
- The gardens will be successful if they are visually pleasing and multi-sensory, appealing to smell and touch as well as sight.

### Design Principles

Simplicity is essential in designing hospital gardens to keep the space easy to understand. Many of the people using healing gardens are dealing with stress, therefore it is important that the spaces do not have too much "going on" to add any additional stress.

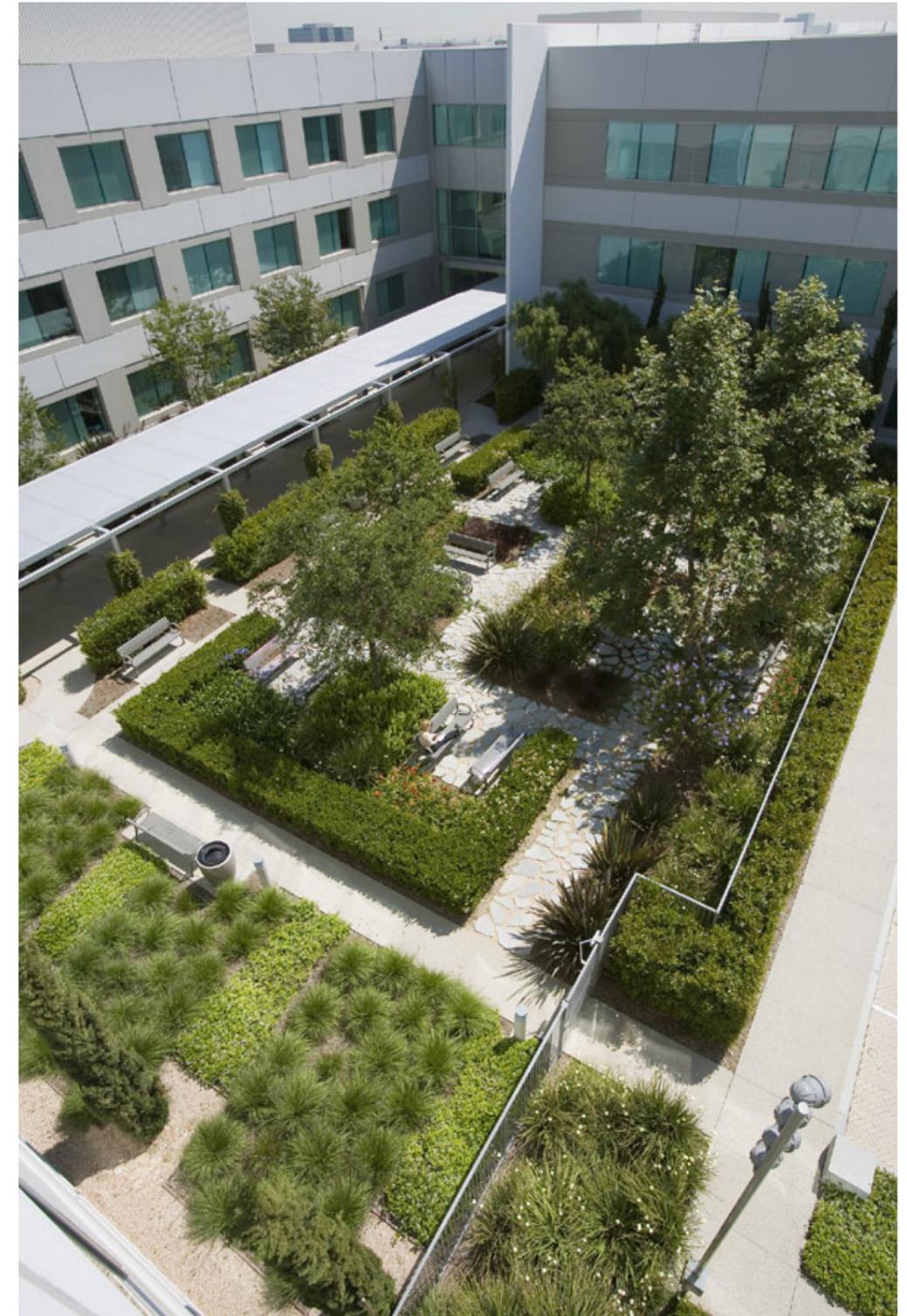
At the same time, the design should include a variety of form, texture, seasonal interest, and colour to provide sensory stimulation. Not having enough interest can also be stressful to the users of the space.

It is important to create balance, whether symmetrical or asymmetrical, so the space feels stable as a whole.

Use specimen, group, and mass plantings to bring highlights to the outdoor spaces. This provides focal points to help people orient themselves in the gardens.

Create a sequence or smooth transitions from one area of the landscape to another. This is especially important to create good flow when moving between public gathering areas to more private areas for solitude.

It is also important to use the appropriate scale. The hospital by its nature is a large building so elements such as trees can help bring the space down to a human scale.



## Overall Design Strategy

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### Design Parameters

#### Paths and Routes

- Footway widths to comply with Part M of Building Regulations, and allow areas to accommodate turning radius of a wheelchair;
- Create a change in texture at the edge of a path as an aid to people with impaired vision. Paving units will be laid to exacting tolerances to avoid uneven edges between individual units;
- Path surfaces must be firm, smooth, and provide traction to allow for easy movement of wheelchairs, gurneys and IV poles. Paving with deep grooves can be an obstacle;
- Avoid materials that produce glare.
- Limit grade changes in most highly used outdoor areas. The gradient of paths shall not exceed a 1:20 gradient.

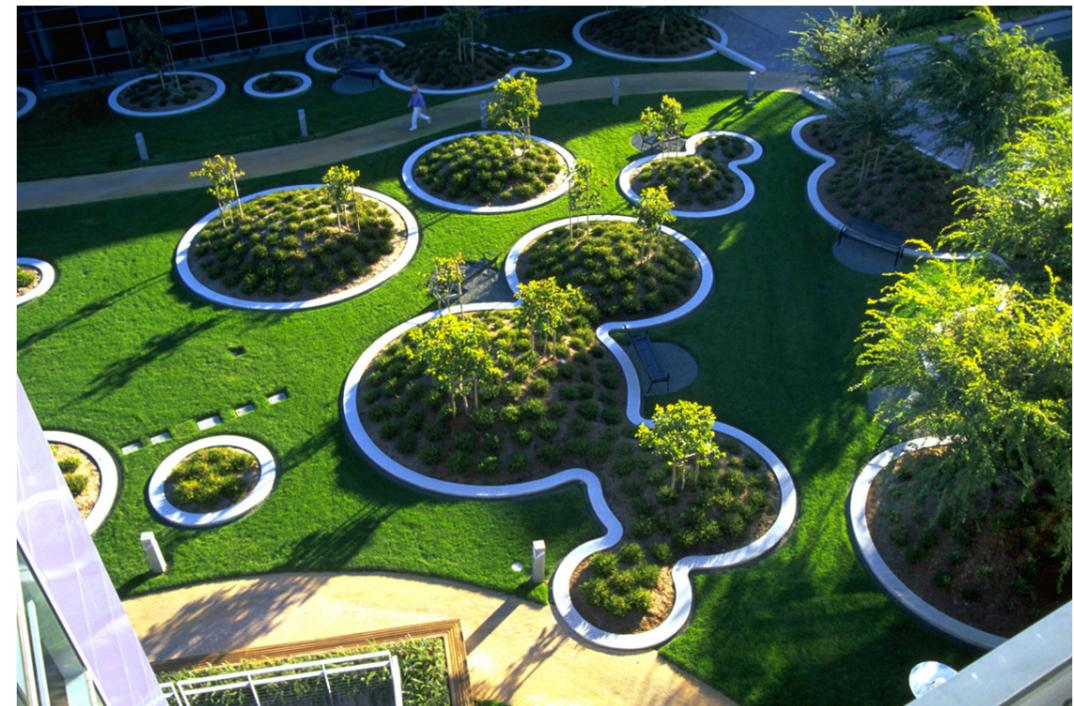
#### Spatial Layout

- Provide a variety of spaces to accommodate different activities and levels of privacy from spaces to accommodate group activities to spaces that allow solitary contemplation.
- Create planted buffers or screens to prevent views into areas such as consulting roofs, wards etc. from publicly accessible areas.
- Provide transition areas between public and private garden spaces.
- Keep intrusive noises to a minimum. Where undesirable noises can't be avoided, incorporate features to mask the sound such as wind chimes or screening.

- The layout of the space should be easily “readable” to minimize confusion for those who could become easily disoriented. Paths should be clearly laid out.
- Landmarks should be provided to help orient the users of the space. This can be done with elements such as sculpture, a profusion of flowers, or specimen trees.
- Offer a variety of sunny and shady areas for people with varying tolerances to light exposure.
- Offer seating of as many types and forms as possible to provide a choice to those using the garden. Lightweight chairs are desirable in allowing users to move the seating wherever they wish but are only permissible in those areas which are not at height (i.e. ground level) or are in staff-only areas. Therefore only fixed seating is permitted in outdoor spaces at height, to reduce health and safety risks. Plenty of sturdy seating with backs and arms should be provided for those that need support for sitting for long periods of time.
- Water provides a calming effect on people, so a water feature should be investigated with reference to the Trust's infection control and M&E guidance.

#### Plant Selection

- Use plants that have some medicinal value.
- Choose plants that engage all the senses. Use a variety of textures, scents, colours, as well as plants that make pleasant sounds as wind rustles their leaves. Providing seasonal interest allows people to connect with the cycle of nature.



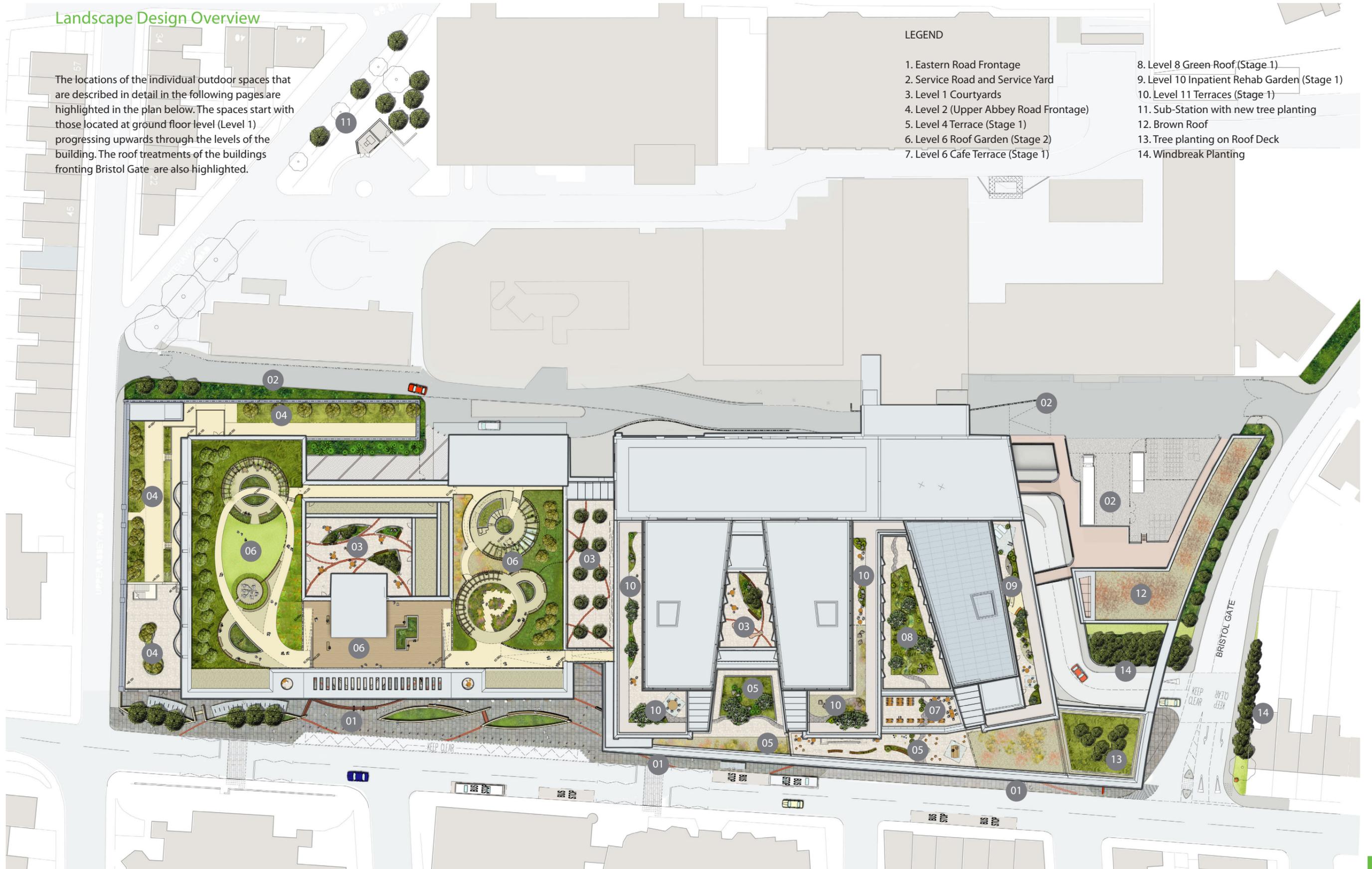
- Avoid thorny or toxic plants. This is especially important in gardens used by children or people with certain psychological disorders.
- Incorporate elements that will attract wildlife but minimise attraction for seagulls. Avoid plants that attract large numbers of bees or undesirable insects.
- Choose insect- and disease-resistant varieties to eliminate pesticide use.
- Plant higher maintenance plants such as vegetables, herbs and cut flowers in easy-to-reach or raised beds.
- Choose planting appropriate to the climatic conditions of the site and Brighton, from exposed coastal positions to enclosed courtyards

## Landscape Design Overview

The locations of the individual outdoor spaces that are described in detail in the following pages are highlighted in the plan below. The spaces start with those located at ground floor level (Level 1) progressing upwards through the levels of the building. The roof treatments of the buildings fronting Bristol Gate are also highlighted.

### LEGEND

- |  |  |
|--|--|
| 1. Eastern Road Frontage               | 8. Level 8 Green Roof (Stage 1)              |
| 2. Service Road and Service Yard       | 9. Level 10 Inpatient Rehab Garden (Stage 1) |
| 3. Level 1 Courtyards                  | 10. Level 11 Terraces (Stage 1)              |
| 4. Level 2 (Upper Abbey Road Frontage) | 11. Sub-Station with new tree planting       |
| 5. Level 4 Terrace (Stage 1)           | 12. Brown Roof                               |
| 6. Level 6 Roof Garden (Stage 2)       | 13. Tree planting on Roof Deck               |
| 7. Level 6 Cafe Terrace (Stage 1)      | 14. Windbreak Planting                       |



Birds Eye view of roof gardens and terraces

