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VIEW ANALYSIS

# View Analysis Introduction

This Visual Impact report has been prepared in response to the Department of Planning's letter 27-09-2010, which requires an assessment of building envelopes proposed within block 4 with particular regard to the impact on residential units in Kent street [Highgate, The Georgia, Stamford Marque, and Stamford on Kent.]

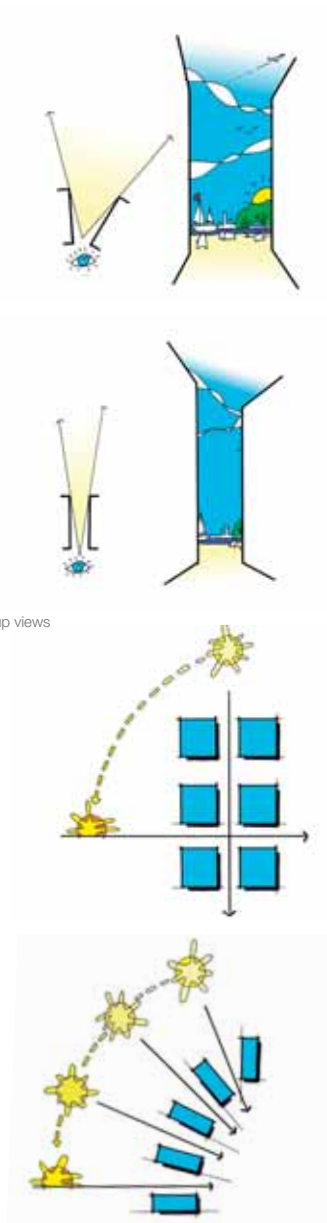
The view sharing principle at Barangaroo South is augmented by the underlying design principle of the scheme which is the 'fan'.

The radial, fanned arrangement responds to the changing nature of the site and its context with the city. This change in geometry is deliberate, providing for deeper sunlight and daylight penetration into the spaces between buildings. This move changes the character of the building's silhouette and skyline and helps temper the density of the development that is established by the grid as it nears the waterfront.

In contrast to a rectilinear grid, the fan establishes a more democratic arrangement eliminating distinction between absolute waterfront and second tier sites.

This grid fragmentation creates the opportunity for an elegant skyline with slender elevations of the buildings that face the waterfront.

The buildings provide a funnel of space that opens up the viewing corridors, which are expanded and drawn out towards the water.



Fan opens up views

Fan opens up solar aspect

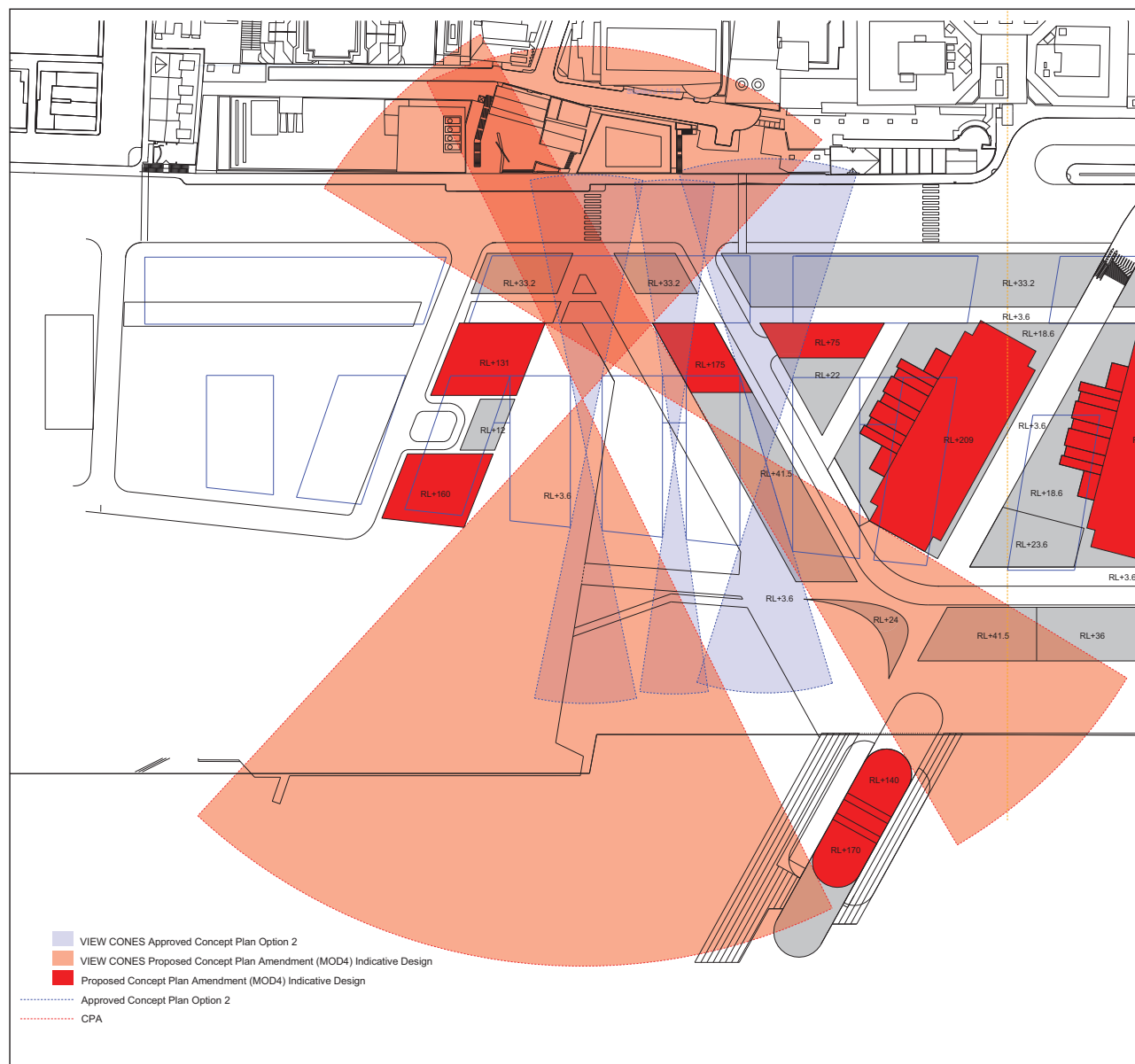


Fan opens up views and solar aspect

## View Analysis

By providing a fan from the residential units and bringing the water body into the site, the intention, when combined with proposing taller more slender buildings is to mitigate the view impact of the scheme at the lower levels replacing the narrow view corridors of the current Concept Plan (as modified) with a broader fanned break between the residential towers.

Our aim in the Visual Analysis is to compare the view conditions of the residential units in Kent Street (Highgate, Stamford, Georgia, and Stamford Marque), and to ascertain the impact of the overall distribution and view corridors with the Proposed Concept Plan Modification (Mod 4) when compared to the Approved Concept Plan (as modified).



Oblique View Analysis - Approved Concept Plan (as modified) (ACP1) Option 2 Indicative Design

# View Analysis and Methodology

## View Analysis

Comparisons were carried out between the following Concept Plans:-

Proposed Concept Plan Amendment (Mod 4) Indicative Design - (CPA)

Approved Concept Plan (as modified) - ACP

Approved Concept Plan (as modified) Option 1 Indicative Design - (ACP1)

Approved Concept Plan (as modified) Option 2 Indicative Design - (ACP2); and

Approved Concept Plan (as modified) Option 3 Indicative Design - (ACP3)

The impacts that these indicative designs would have on the residential buildings on Kent Street. The residential buildings Highgate, Georgia, Stamford Marque and the Stamford on Kent were analysed.

The indicative design options for the Approved Concept Plan (as modified) is described in detail in the Concept Plan Modification 2 Application approved by the Minister for Planning on 16.02.2009.

## Methodology

No accurate survey information was available to verify the accuracy of the built buildings but the illustrations give a level of understanding and indication of the impacts on the views. This is further supported by 3D visual illustrations from the view points used for this analysis.

Two methods were used to assess the impact on the views on the residential buildings.

- **Orthogonal** - the projection of uninterrupted views were taken from the west looking east as orthogonal to the residential buildings to establish which views would be affected.

- **Oblique** - the orthogonal assessment methodology is a simplistic method of assessing of the views and as such we have provided a more considered assessment of view sharing utilising an oblique methodology.

Using this method two heights were taken as samples for views from each of the residential buildings at levels of RL59 and RL90.

To measure a reasonable level of uninterrupted views and no loss of amenity from the residential buildings we used an angle that matched the average view angles of the Approved Concept Plan Amendment (as modified) which is an angle of 54° or greater. This has been measured from Stamford on Kent lower level, as shown on Page 26, and therefore used as the benchmark to assess the Concept Plan Amendment.

For the purposes of this analysis, the ACP2 - Approved Concept Plan (as modified) Option 2 Indicative Design was taken as the base scheme to measure against.

# Kent Street Residential Units





# Orthogonal Projection of Scheme onto Residential Units

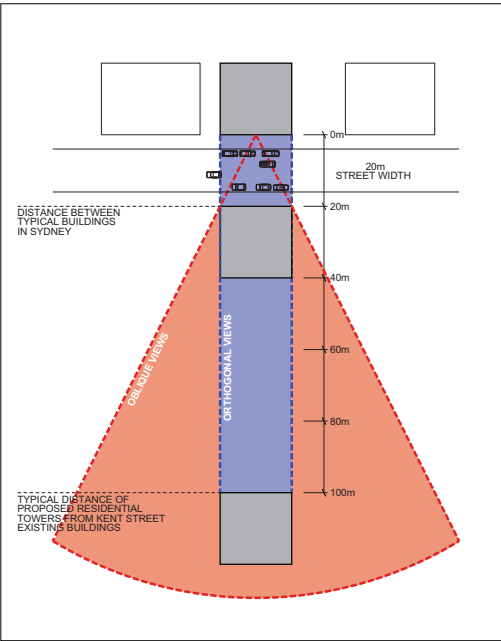
The elevation of the residential buildings: Highgate, Georgia, Stamford Marque, and Stamford on Kent have been illustrated. On each of the building's facades the floor levels and the number of units have been illustrated. Further to this the following has been identified:

- Areas which views have not changed (Blue);
- Areas that have increased view corridors in comparison with the Approved Concept Plan (as modified) (Green); and
- Areas that have reduced view corridors in comparison with the Approved Concept Plan (as modified) (Orange).

The orthogonal studies indicate that the number of units with reduced view corridors is greater than the number of units with increased view corridors, but it is recognised that this approach does not assess oblique views. This methodology provides an assessment of the simple elevation and ignores improved view sharing provided by the Proposed Concept Plan Amendment (Mod 4) Indicative Design when compared with the options proposed in the approved Concept Plan (as modified).

Based on the orthogonal view methodology there are impacts on the views from the residential buildings and this loss is quantified in the table below.

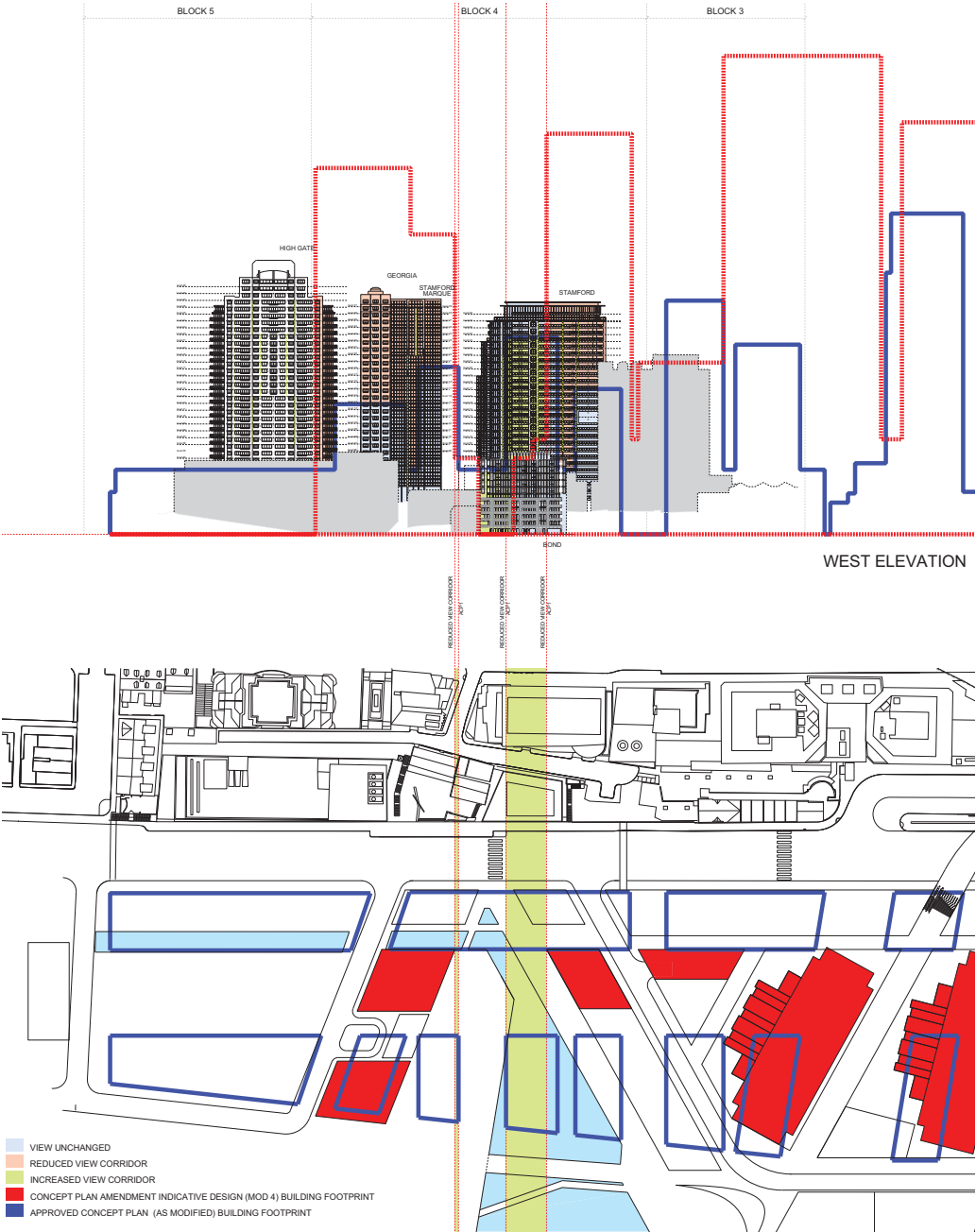
The orthogonal view should also be considered in context. As indicated in the adjacent diagram, the distance from the Kent Street residential buildings to the primary residential tower on the Barangaroo South is circa 100m. This has the added benefit of a wider field of view.



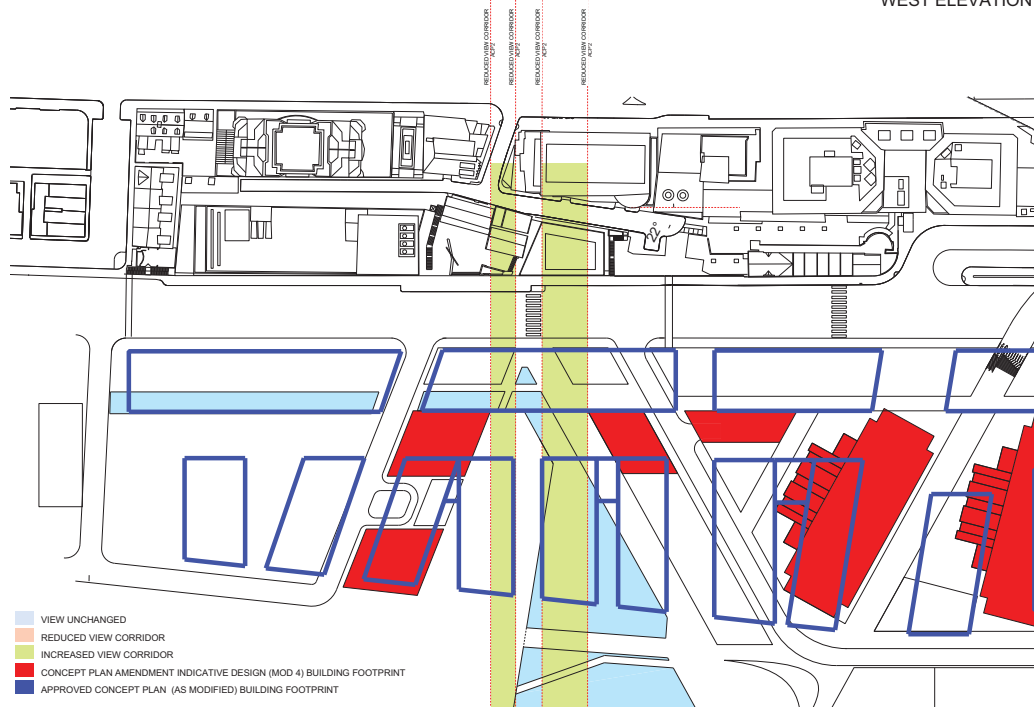
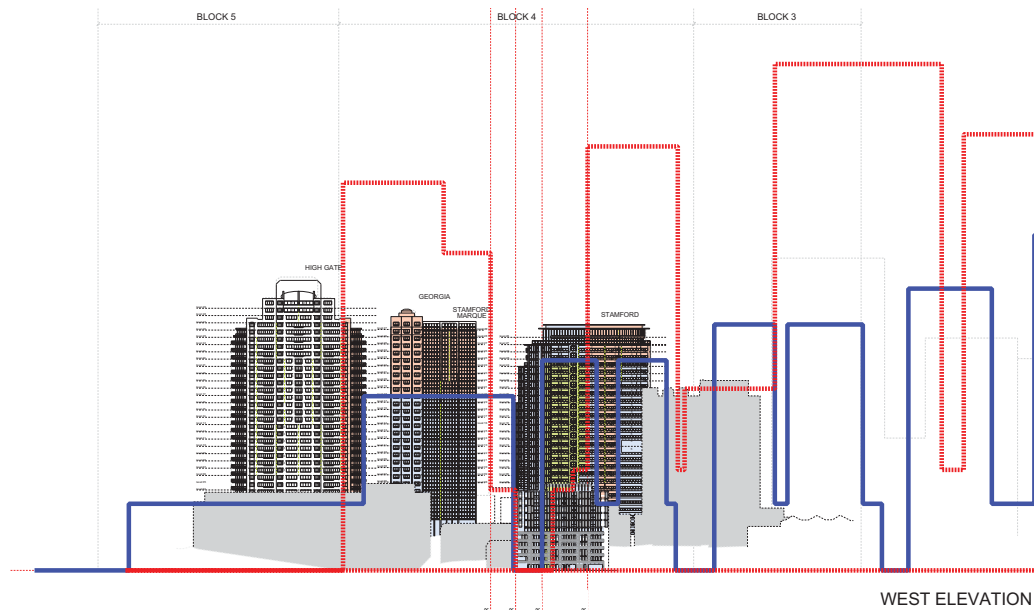
Orthogonal and oblique view diagram

Approved Concept Plan	View loss in total units When compared to CPA	View gain in total units When compared to CPA	Balance
Option 1 (ACP1)	113	52	-61
Option 2 (ACP2)	80	43	-37
Option 3 (ACP3)	67	37	-30

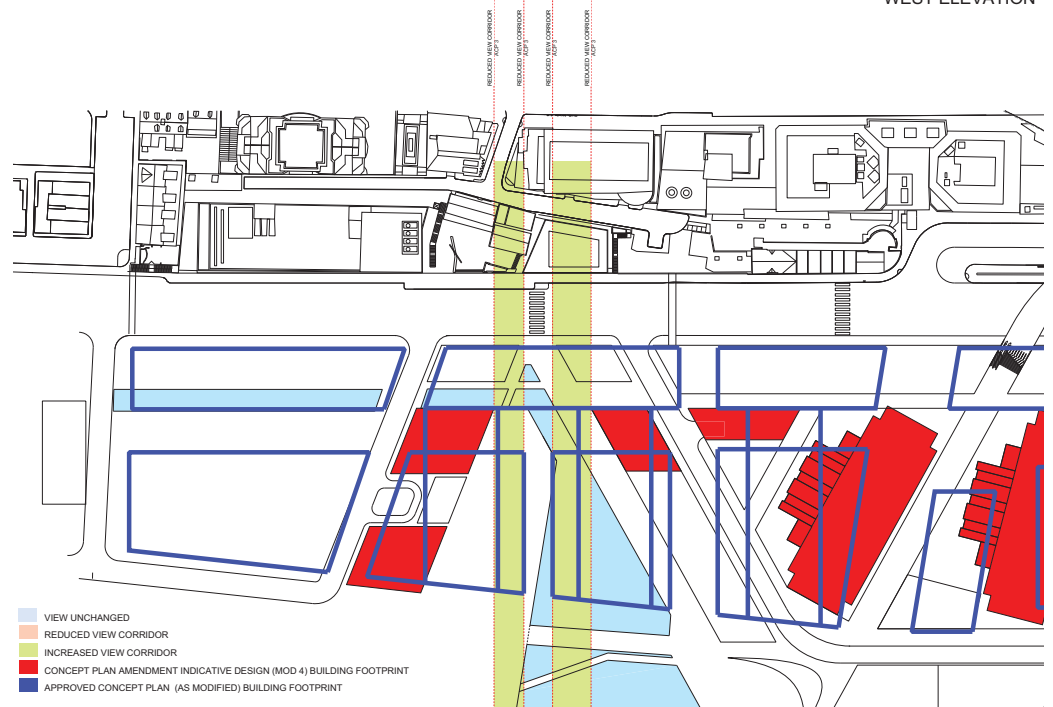
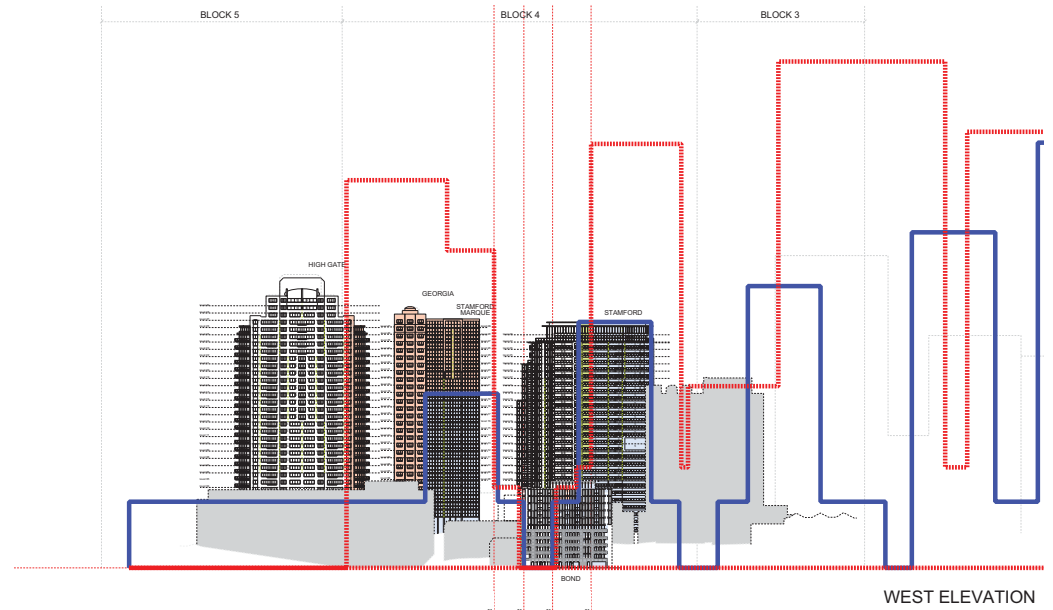
Table of quantities summary



Proposed Concept Plan Amendment (Mod 4) Indicative Design comparison to Approved Concept Plan (as modified) (ACP1)



Proposed Concept Plan Amendment (Mod 4) Indicative Design comparison to Approved Concept Plan (as modified) (ACP2)



Proposed Concept Plan Amendment (Mod 4) Indicative Design comparison to Approved Concept Plan (as modified) (ACP3)





# Aims of Oblique View Analysis from Residential Units

	Total Oblique View Angle using approved Concept Plan (ACP2)	Total Oblique View Angle using Concept Plan Amendment (mod4)	Difference	Conclusion
Highgate Level 15	91°	94°	+3°	View greater than 54 ° is maintained
Highgate Level 25	129°	94°	-35°	View greater than 54 ° is maintained
Georgia Level 15	84°	88°	+4°	View greater than 54 ° is maintained
Georgia Level 25	125°	88°	-37°	View greater than 54 ° is maintained
Stamford Marque Level 15	77°	87°	+10°	View greater than 54 ° is maintained
Stamford Marque Level 25	120°	87°	-33°	View greater than 54 ° is maintained
Stamford on Kent Level 15	54°	62°	+8°	View greater than 54 ° is maintained
Stamford on Kent Level 25	102°	66°	-36°	View greater than 54 ° is maintained

Table of oblique views

The Approved Concept Plan (as modified) has the most significant impact on the lower levels of Stamford on Kent and as such we have used this to calculate the 54°. This has been used as a benchmark in assessing the view sharing achieved by the Proposed Concept Amendment (Mod 4).

What this achieves when reviewing the Approved Concept Plan (as modified) and Concept Plan Amendment (Mod 4) in a wider sense is that the new scheme aims to provide view sharing from the majority of levels from the adjacent residential buildings rather than maximising the views from the higher parts of the building.

In the Approved Concept Plan (as modified) generally units in the existing residential buildings below RL 112, in Block 3 and RL 98 in Block 4 have views substantially impacted, and those living above have a full direct view.

The revised Concept Plan Amendment (Mod 4) aims to achieve view sharing.

This is primarily achieved by having taller buildings than larger gaps between the buildings which enables oblique views and view corridors as contemplated by the Approved Concept Plan (as modified)

The result is that residents in the lower levels of the Concept Plan Amendment (Mod 4) scheme have significantly increased views.

The oblique views should also be considered in the context. The distance between the proposed tower forms and the Kent Street residential buildings differs. For example, Highgate to Commercial tower C3 is 215m, and 310m to the Hotel. This has the added benefit of the wider field of view.

For the purpose of the documentation we have utilised Option 2 from the Approved Concept Plan (as modified) as the comparison in the Visual Analysis as this represents a medium impact using the orthogonal view assessment method.

The summary of the oblique view analysis is outlined in the table.

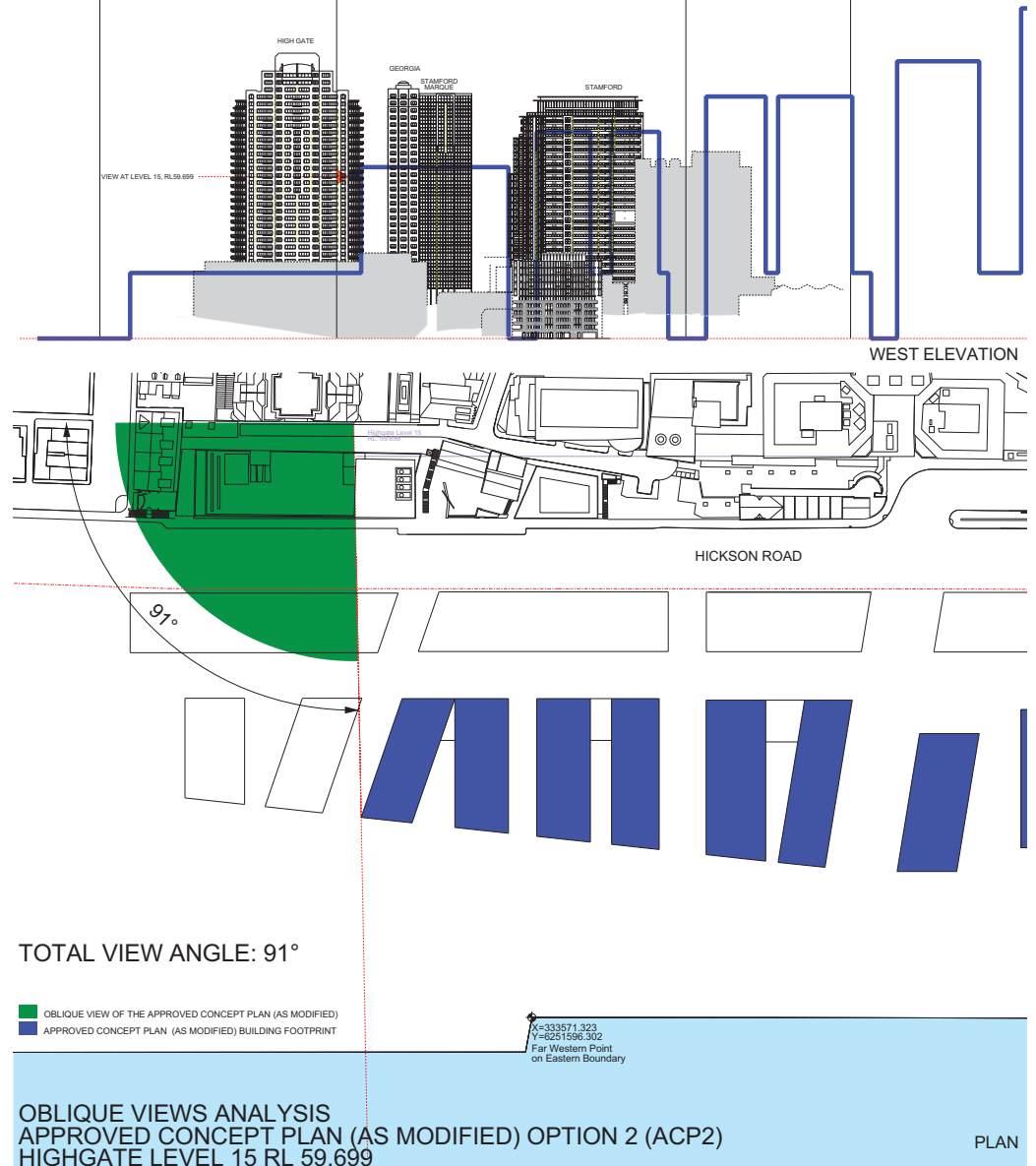
# Highgate - Lower Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 15 - RL59.699

## Highgate - Views at Level 15 at RL59.699

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 91°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 94°

**Uninterrupted view greater than 54° is maintained**



# Highgate - Lower Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design  
Level 15 - RL59.699

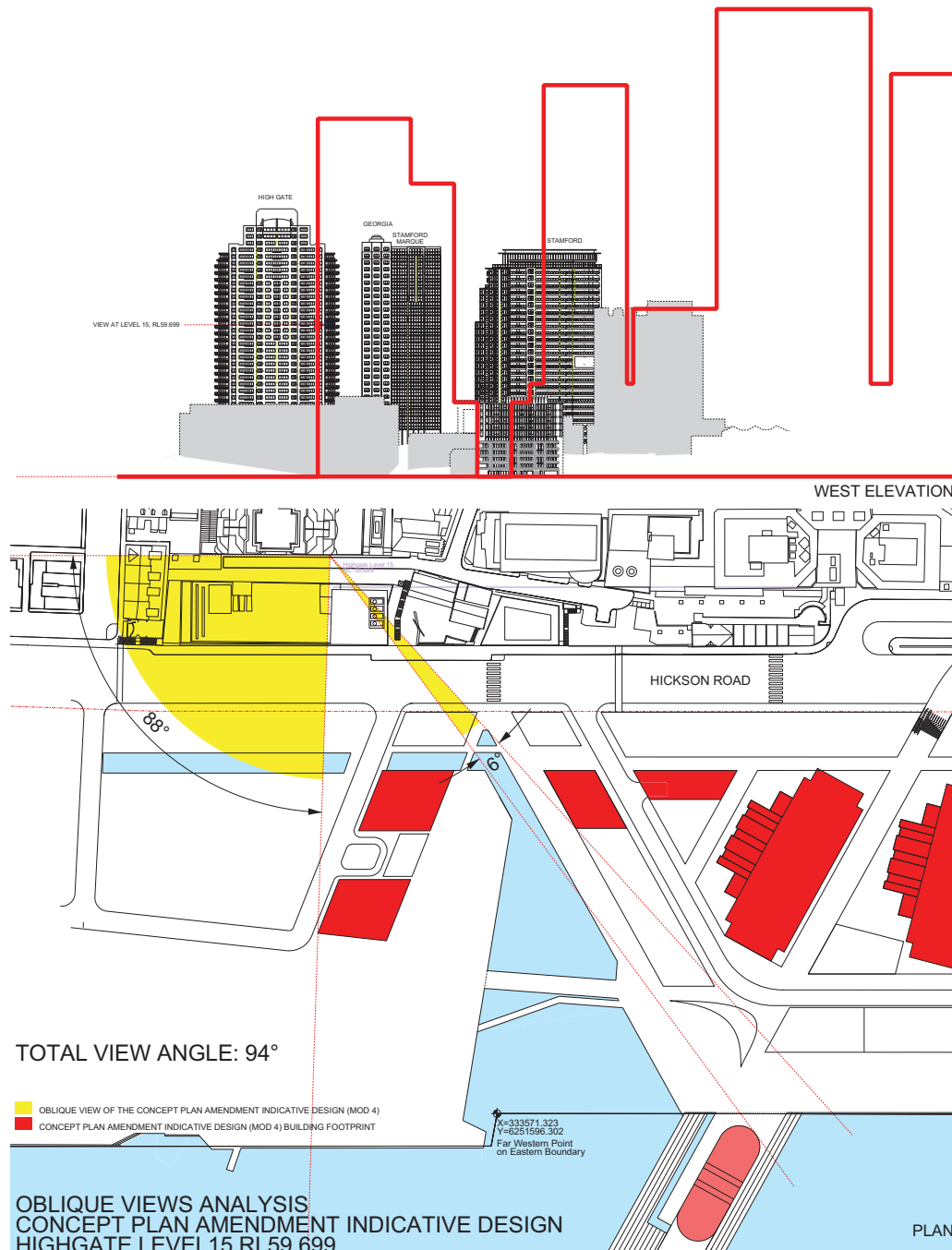


Image showing view from Level 15 from Highgate  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas

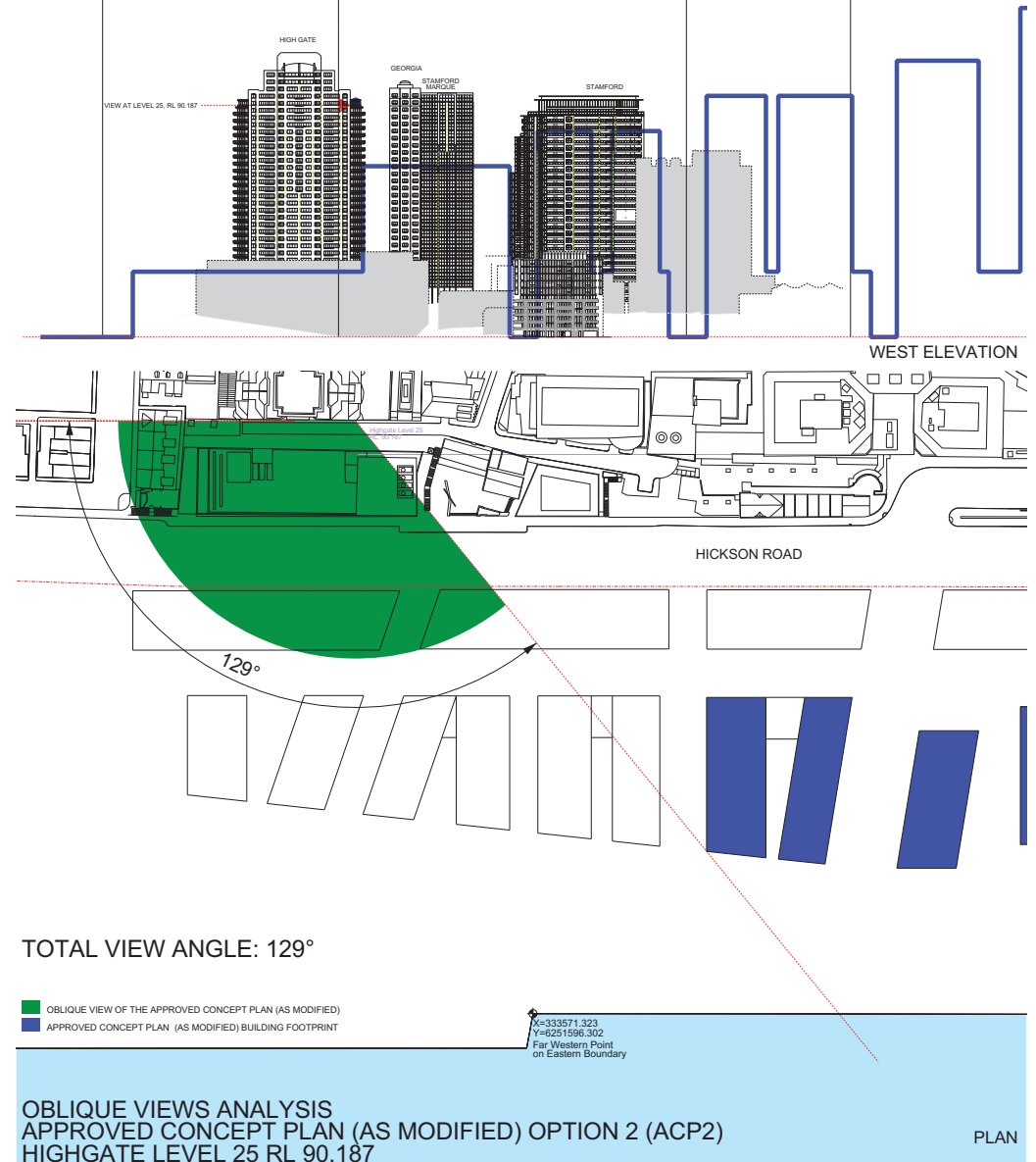
# Highgate - Upper Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 25 - RL90.187

## Highgate - Views at Level 25 at RL90.187

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 129°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 94°

**Uninterrupted view greater than 54° is maintained**





# Highgate - Upper Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design  
Level 25 - RL90.187

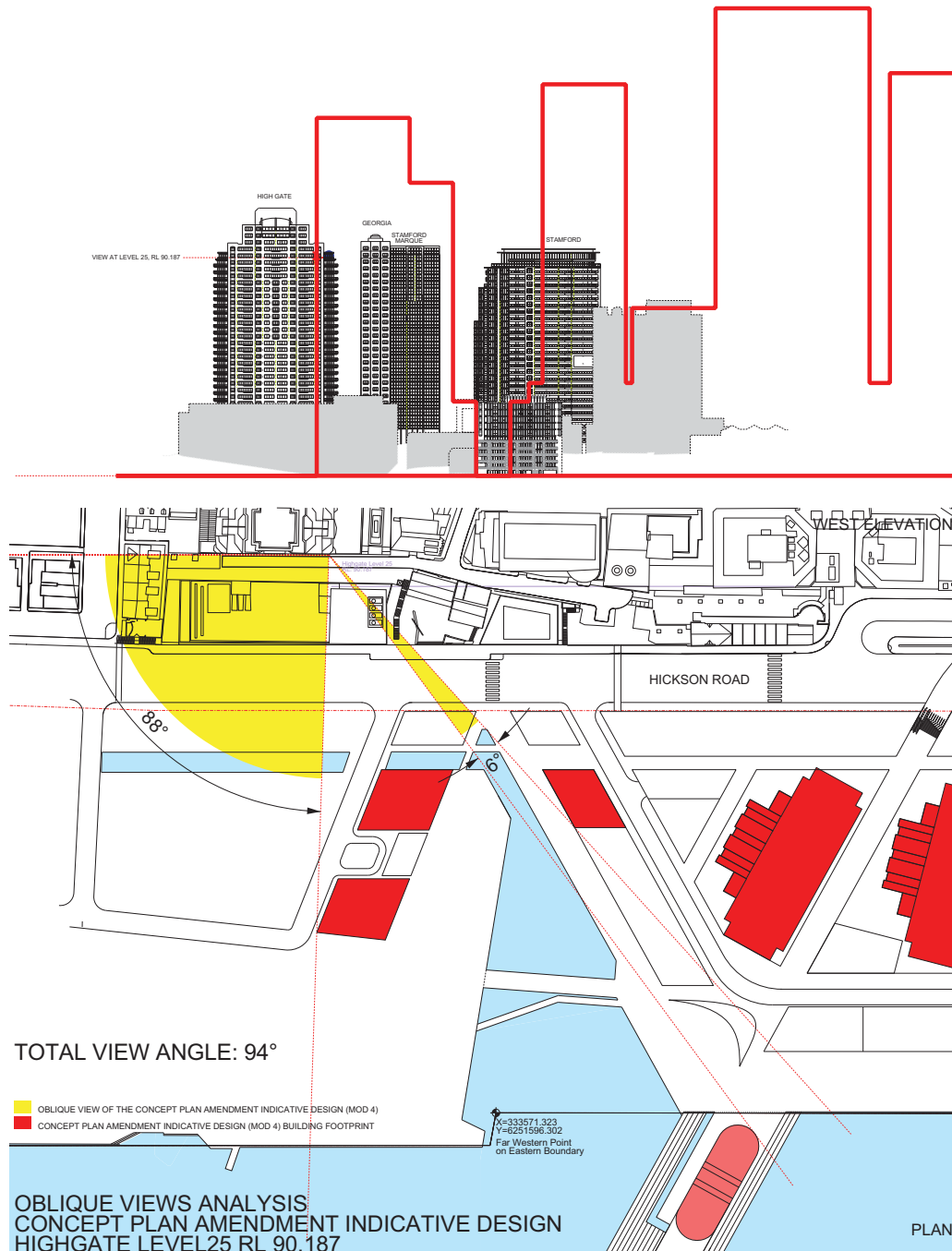


Image showing view from Level 25 from Highgate  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas



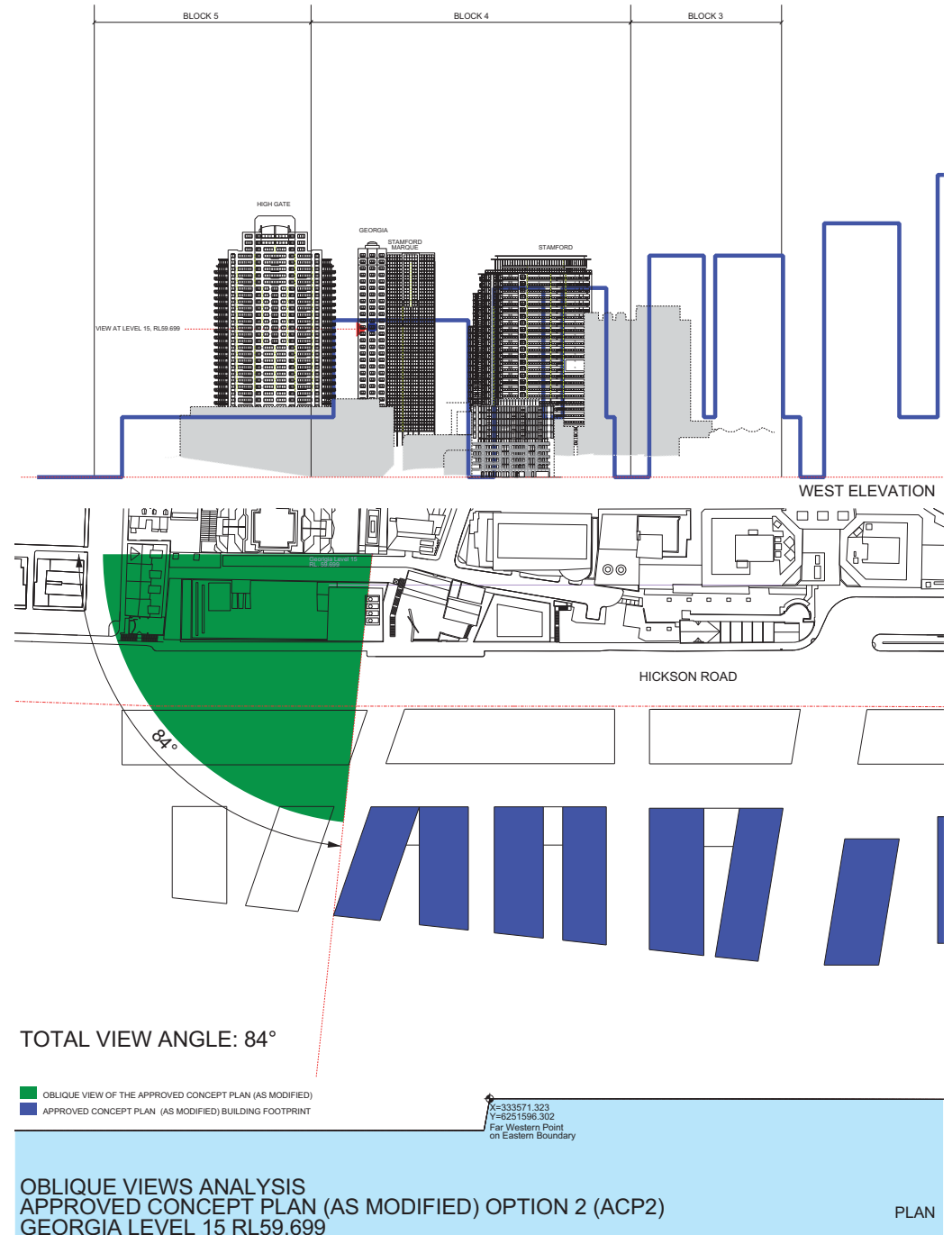
# Georgia - Lower Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 15 - RL59.699

## Georgia - Views at Level 15 at RL59.699

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 84°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 88°

**Uninterrupted view greater than 54° is maintained**



# Georgia - Lower Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design

Level 15 - RL59.699

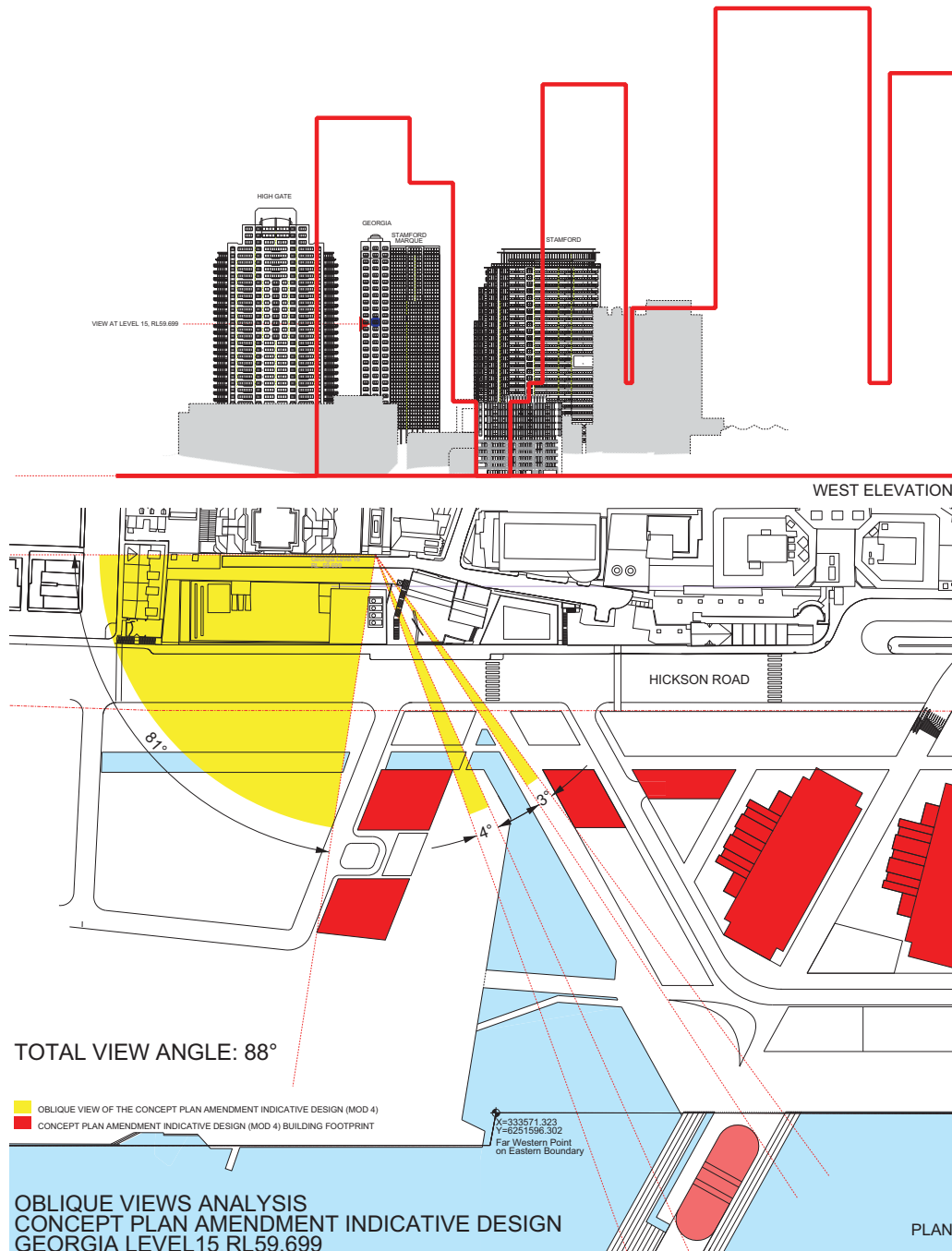


Image showing view from Level 15 from Georgia  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas

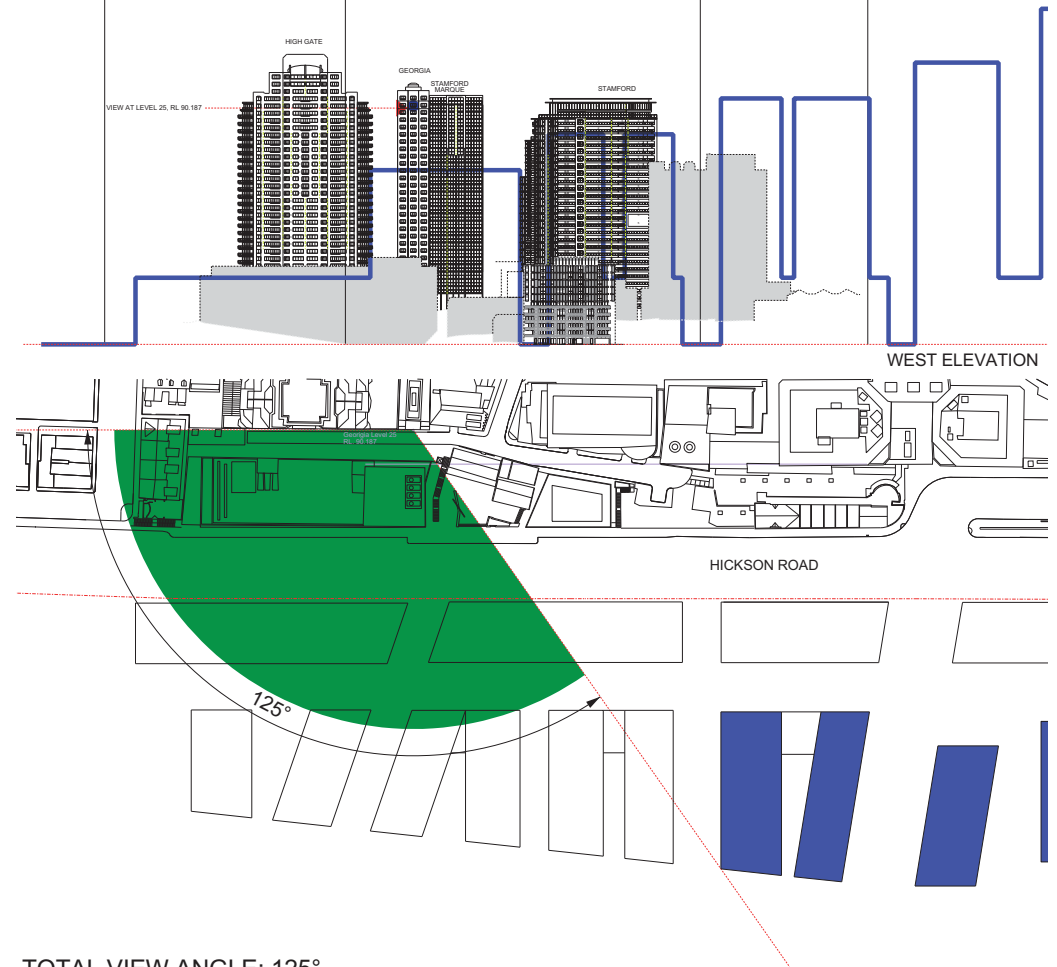
# Georgia - Upper Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 25 - RL90.187

## Georgia - Views at Level 25 at RL90.187

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 125°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 88°

**Uninterrupted view greater than 54° is maintained**



TOTAL VIEW ANGLE: 125°

■ OBLIQUE VIEW OF THE APPROVED CONCEPT PLAN (AS MODIFIED)  
■ APPROVED CONCEPT PLAN (AS MODIFIED) BUILDING FOOTPRINT

X=333571.323  
Y=6251596.302  
Far Western Point  
on Eastern Boundary

OBLIQUE VIEWS ANALYSIS  
APPROVED CONCEPT PLAN (AS MODIFIED) OPTION 2 (ACP2)  
GEORGIA LEVEL 25 RL 90.187

PLAN

# Georgia - Upper Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design

Level 25 - RL90.187

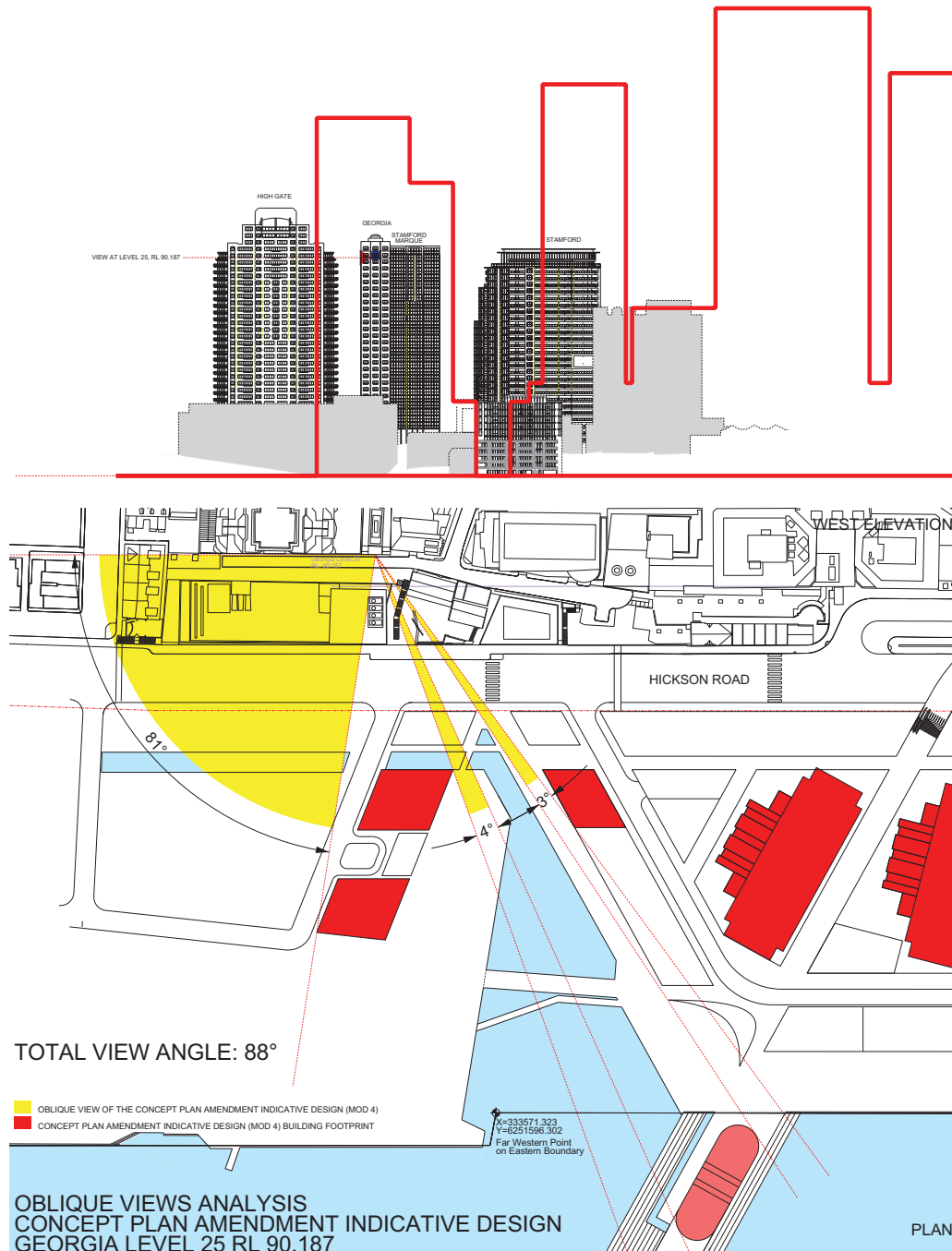


Image showing view from Level 25 from Georgia  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas



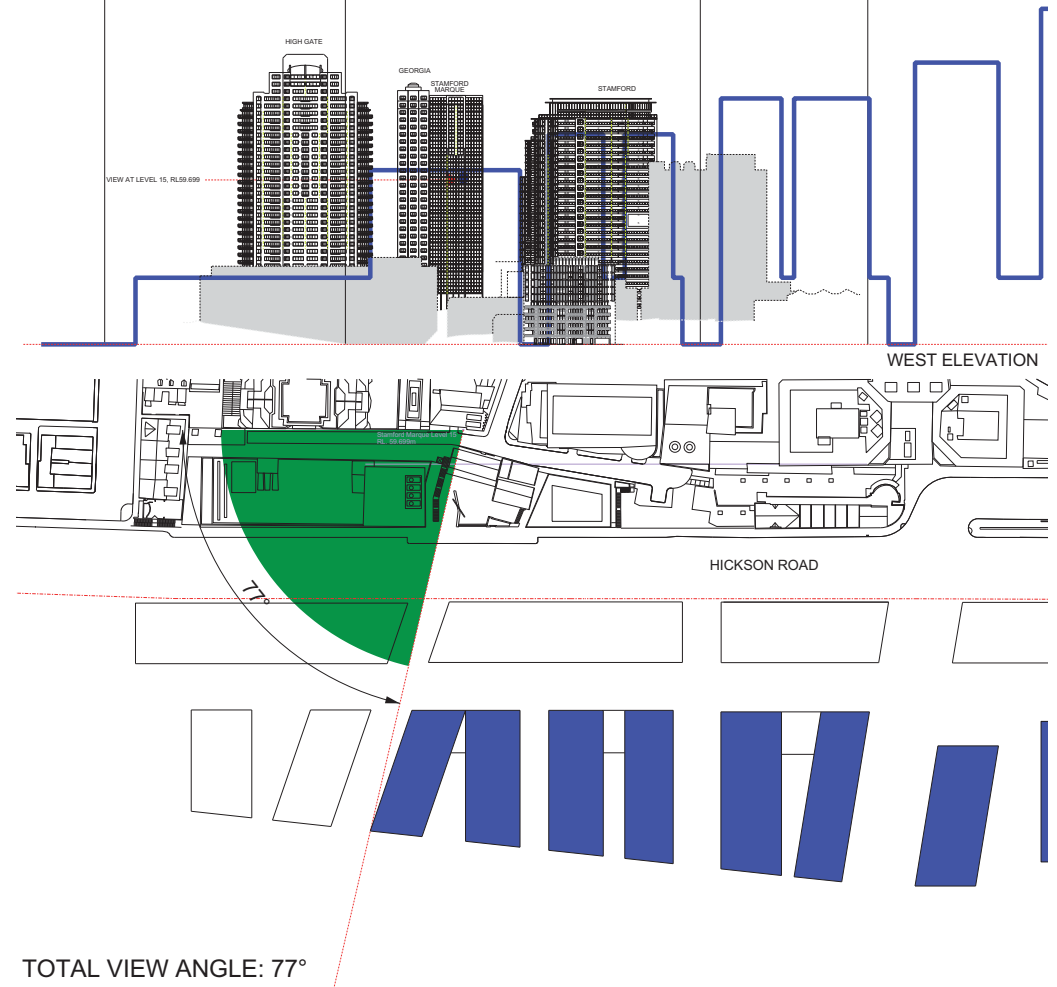
# Stamford Marquee - Lower Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 15 - RL59.699

## Stamford Marquee - Views at Level 15 at RL59.699

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 77°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 87°

**Uninterrupted view greater than 54° is maintained**



TOTAL VIEW ANGLE: 77°

■ OBLIQUE VIEW OF THE APPROVED CONCEPT PLAN (AS MODIFIED)  
■ APPROVED CONCEPT PLAN (AS MODIFIED) BUILDING FOOTPRINT

X=333571.323  
Y=6251596.302  
Far Western Point  
on Eastern Boundary

OBLIQUE VIEWS ANALYSIS  
APPROVED CONCEPT PLAN (AS MODIFIED) OPTION 2 (ACP2)  
STAMFORD MARQUEE LEVEL 15 RL59.699

PLAN



# Stamford Marquee - Lower Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design  
Level 15 - RL59.699

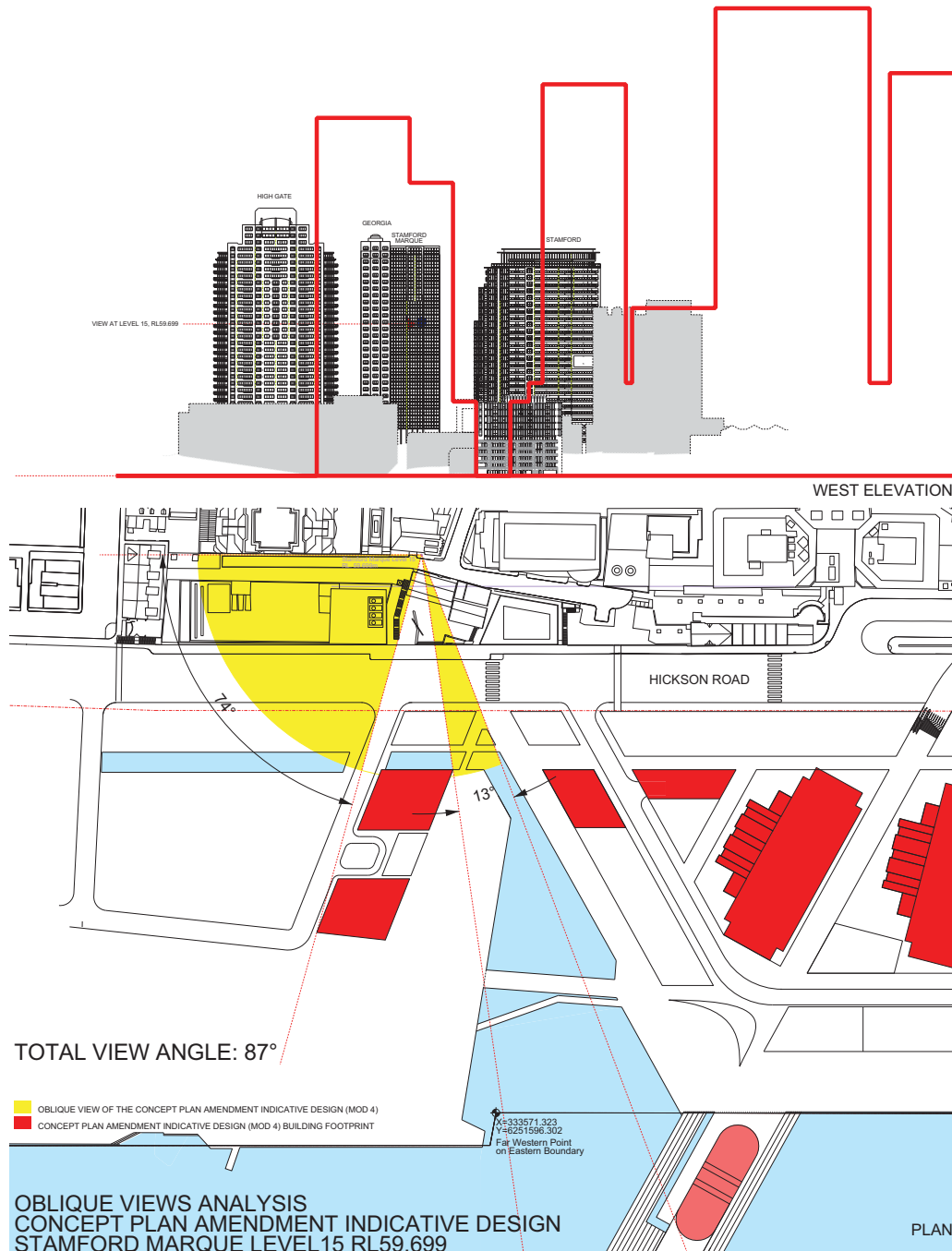


Image showing view from Level 15 from Stamford Marquee  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas

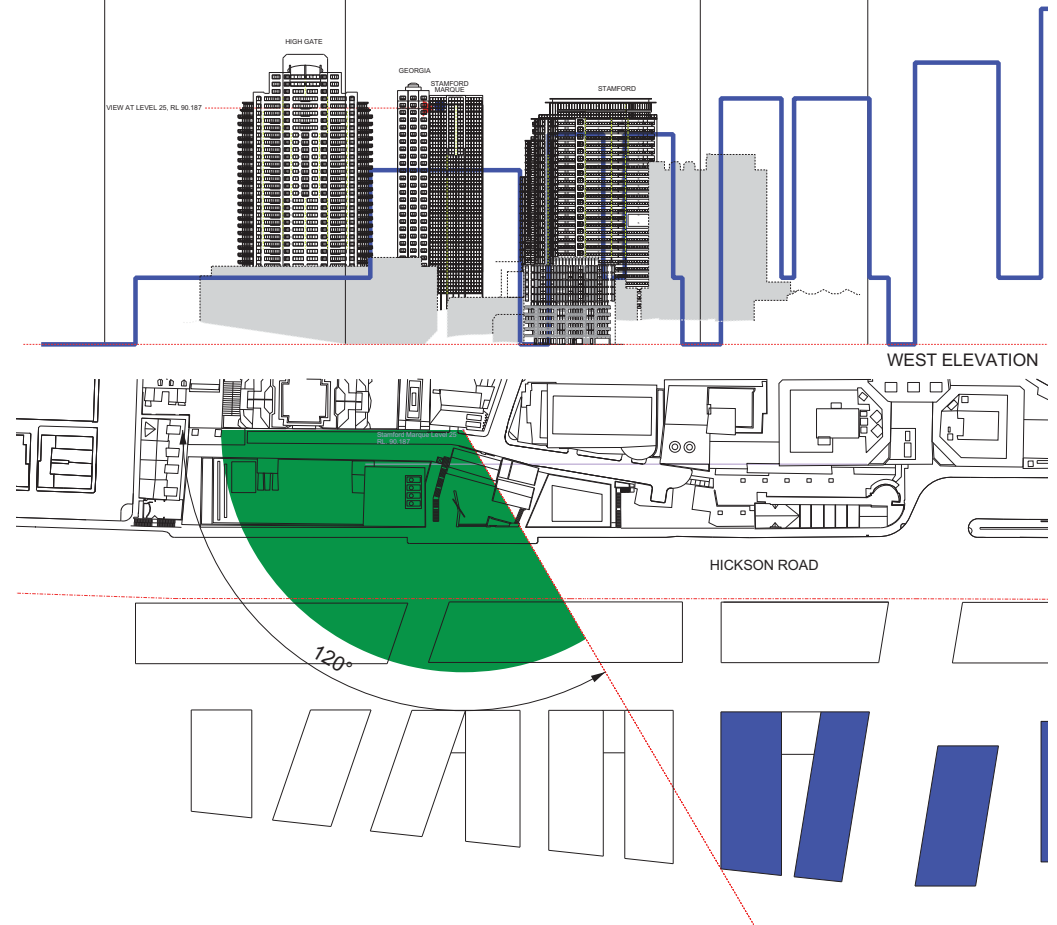
# Stamford Marquee - Upper Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 25 - RL90.187

## Stamford Marquee - Views at Level 25 at RL90.187

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 120°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 87°

**Uninterrupted view greater than 54° is maintained**



TOTAL VIEW ANGLE: 120°

■ OBLIQUE VIEW OF THE APPROVED CONCEPT PLAN (AS MODIFIED)  
■ APPROVED CONCEPT PLAN (AS MODIFIED) BUILDING FOOTPRINT

X=333571.323  
Y=6251596.302  
Far Western Point  
on Eastern Boundary

OBLIQUE VIEWS ANALYSIS  
APPROVED CONCEPT PLAN (AS MODIFIED) OPTION 2 (ACP2)  
STAMFORD MARQUEE LEVEL 25 RL 90.187

PLAN

# Stamford Marquee - Upper Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design

Level 25 - RL90.187

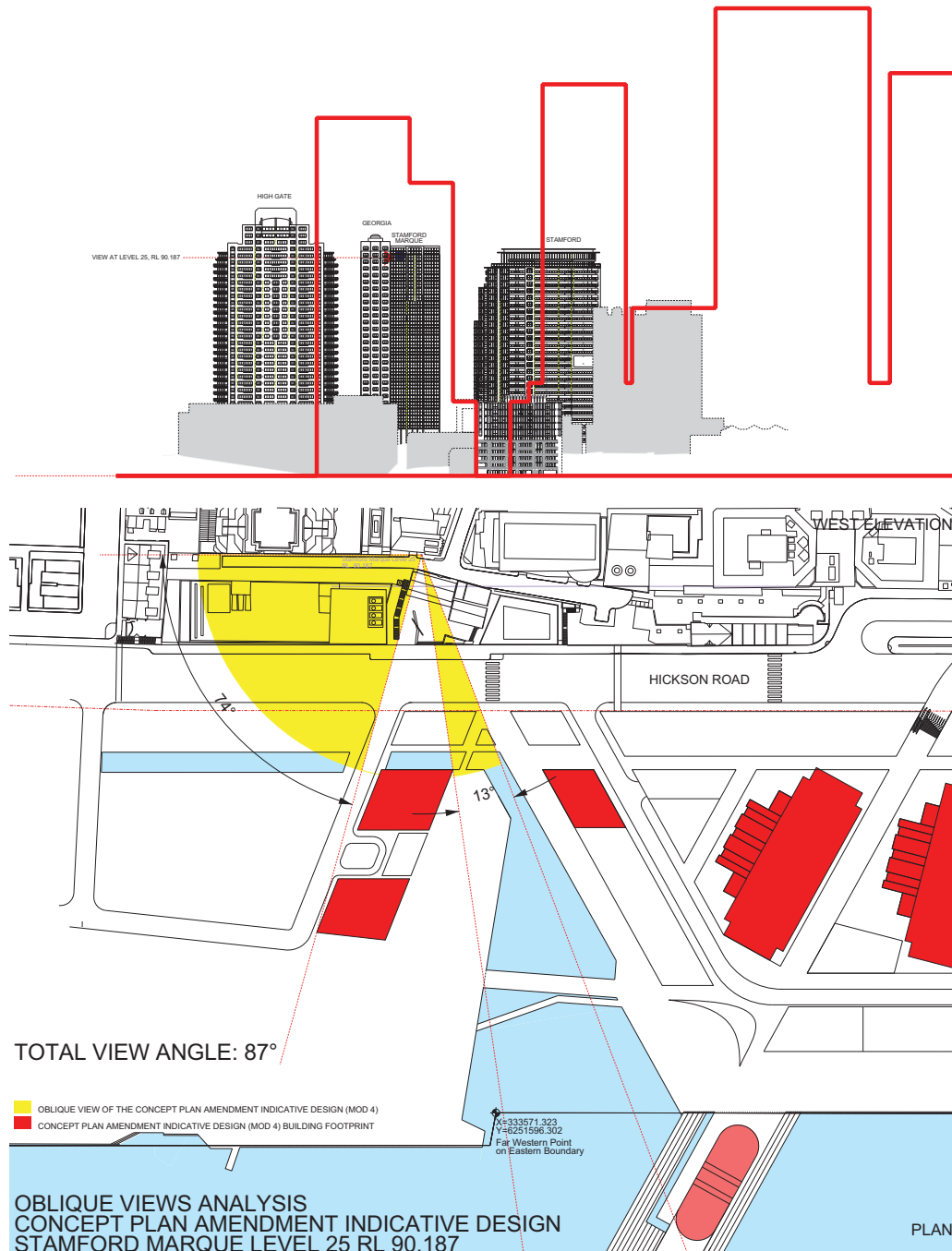


Image showing view from Level 25 from Stamford Marquee  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas

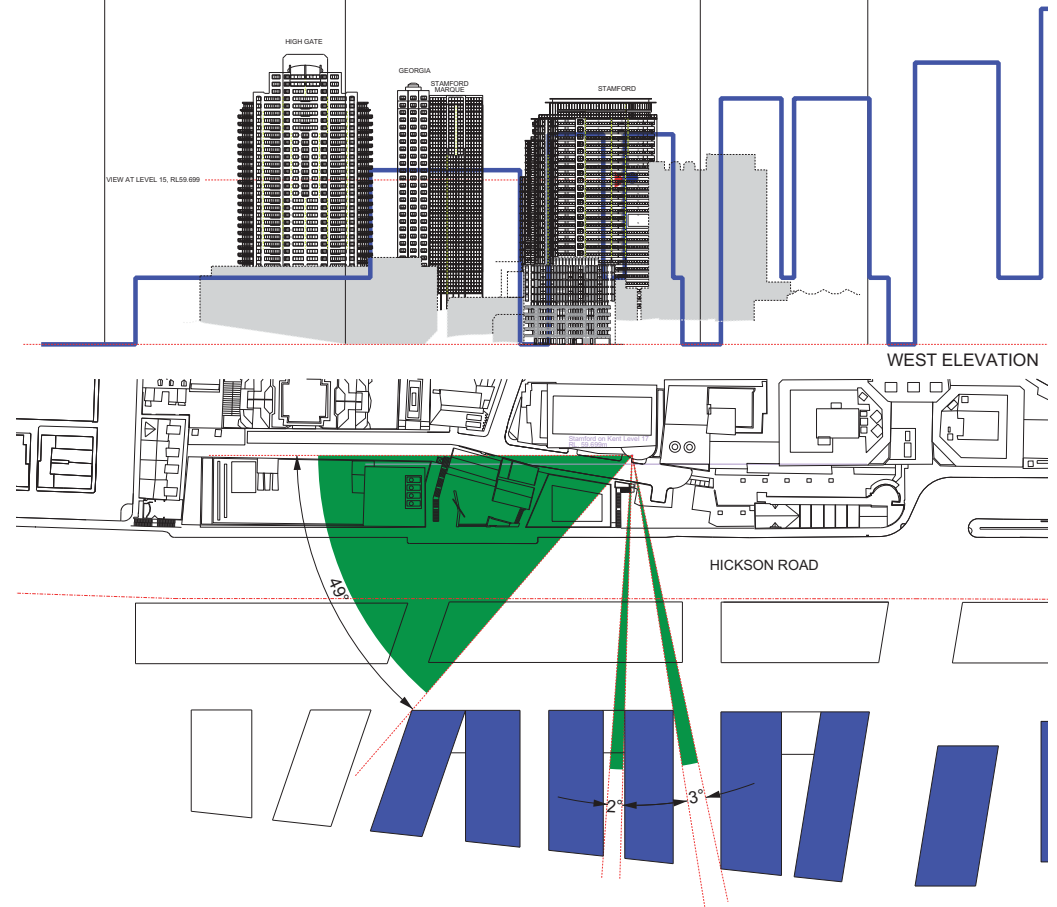
# Stamford on Kent - Lower Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 15 - RL59.699

## Georgia - Views at Level 15 at RL59.699

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle  $54^{\circ}$
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle  $62^{\circ}$

**Uninterrupted view greater than  $54^{\circ}$  is maintained**



TOTAL VIEW ANGLE:  $54^{\circ}$

■ OBLIQUE VIEW OF THE APPROVED CONCEPT PLAN (AS MODIFIED)  
■ APPROVED CONCEPT PLAN (AS MODIFIED) BUILDING FOOTPRINT

$X=333571.323$   
 $Y=6251596.302$   
Far Western Point  
on Eastern Boundary

OBLIQUE VIEWS ANALYSIS  
APPROVED CONCEPT PLAN (AS MODIFIED) OPTION 2 (ACP2)  
STAMFORD ON KENT LEVEL 17 RL59.699

PLAN



# Stamford on Kent - Lower Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design  
Level 15 - RL59.699

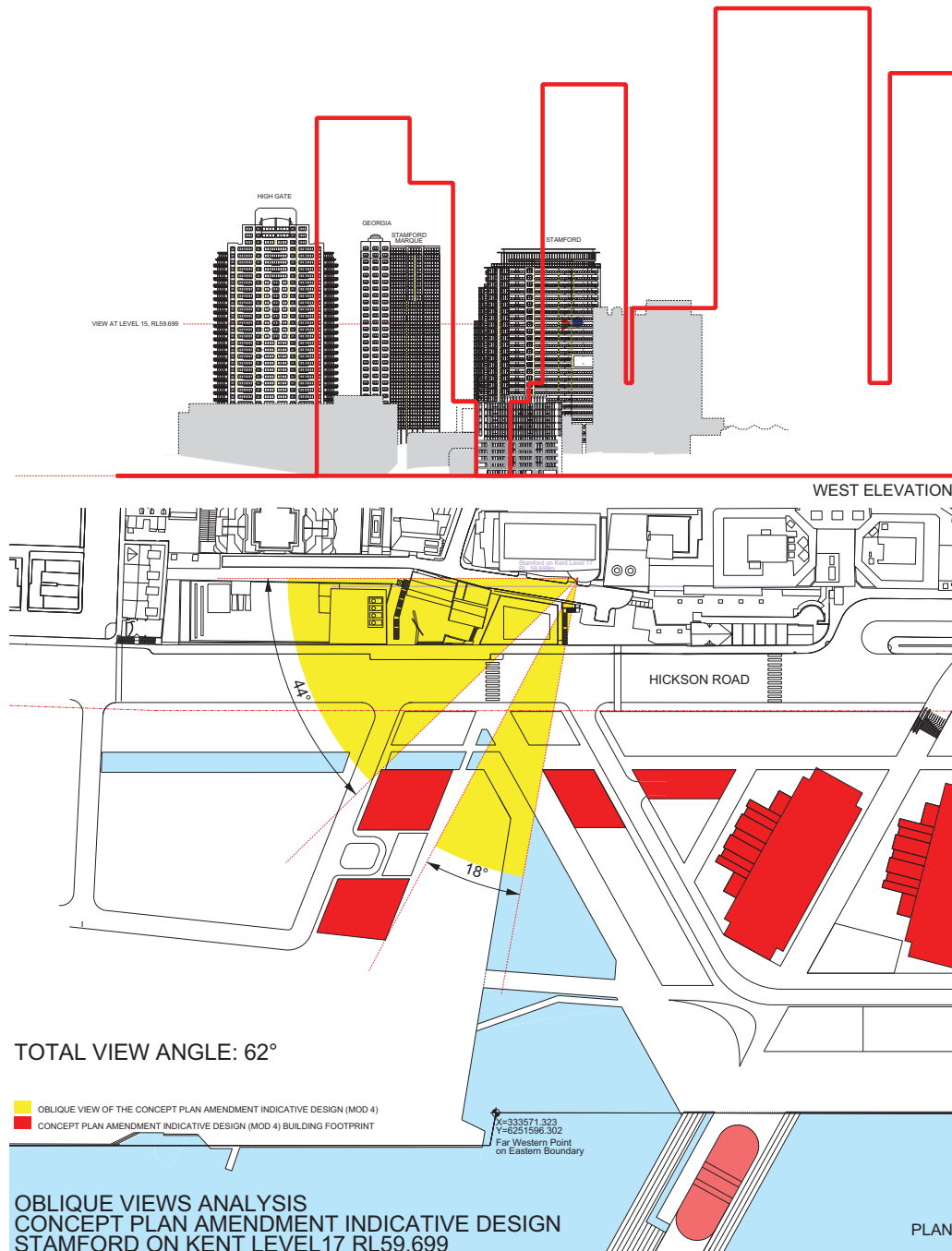


Image showing view from Level 15 Stamford on Kent  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas



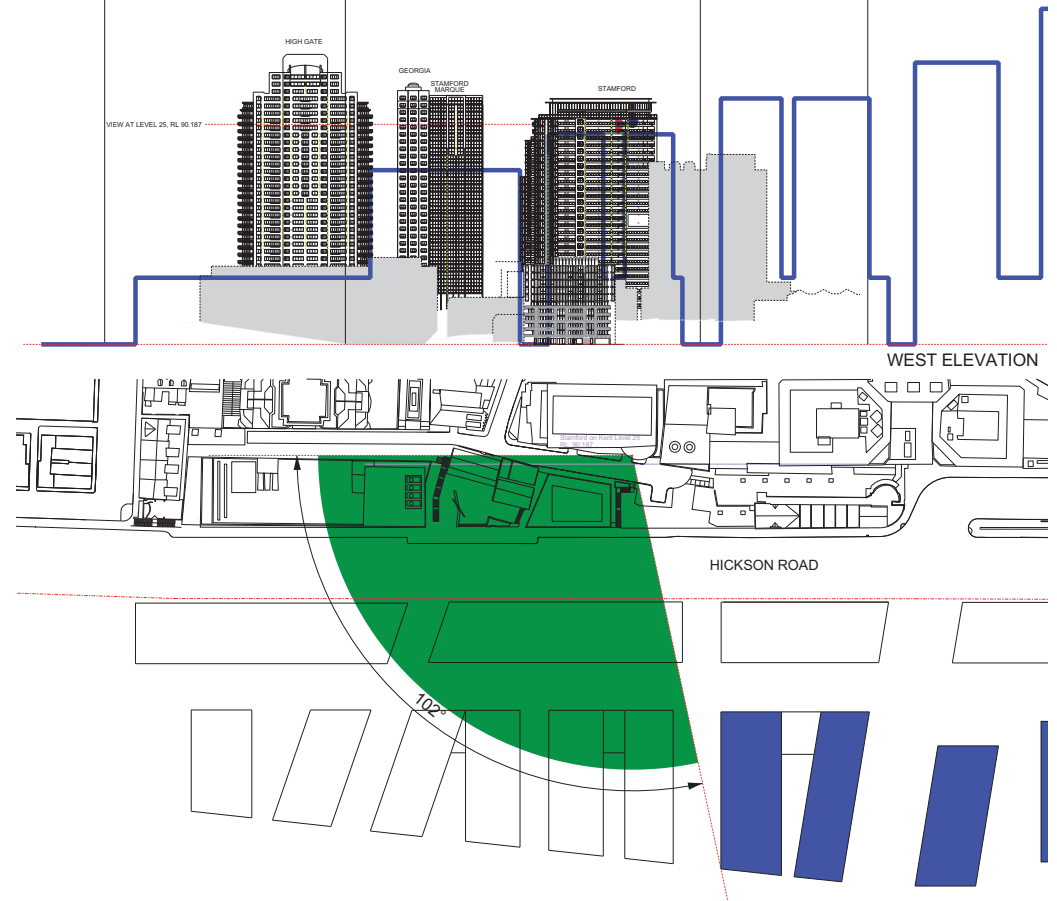
# Stamford on Kent - Upper Levels

Approved Concept Plan (As Modified) Option 2 (ACP2) Indicative Design  
Level 25 - RL90.187

## Georgia - Views at Level 25 at RL90.187

- Approved Concept Plan (as modified) Option 2 Indicative Design  
Existing uninterrupted view angle 102°
- Proposed Concept Plan Amendment (Mod 4) Indicative  
Uninterrupted view angle 66°

**Uninterrupted view greater than 54° is maintained**



TOTAL VIEW ANGLE: 102°

■ OBLIQUE VIEW OF THE APPROVED CONCEPT PLAN (AS MODIFIED)  
■ APPROVED CONCEPT PLAN (AS MODIFIED) BUILDING FOOTPRINT

X=333571.323  
Y=6251596.302  
Far Western Point  
on Eastern Boundary

OBLIQUE VIEWS ANALYSIS  
APPROVED CONCEPT PLAN (AS MODIFIED) OPTION 2 (ACP2)  
STAMFORD ON KENT LEVEL 25 RL 90.187

PLAN

# Stamford on Kent - Upper Levels

Proposed Concept Plan Amendment (MOD 4) Indicative Design  
Level 25 - RL90.187

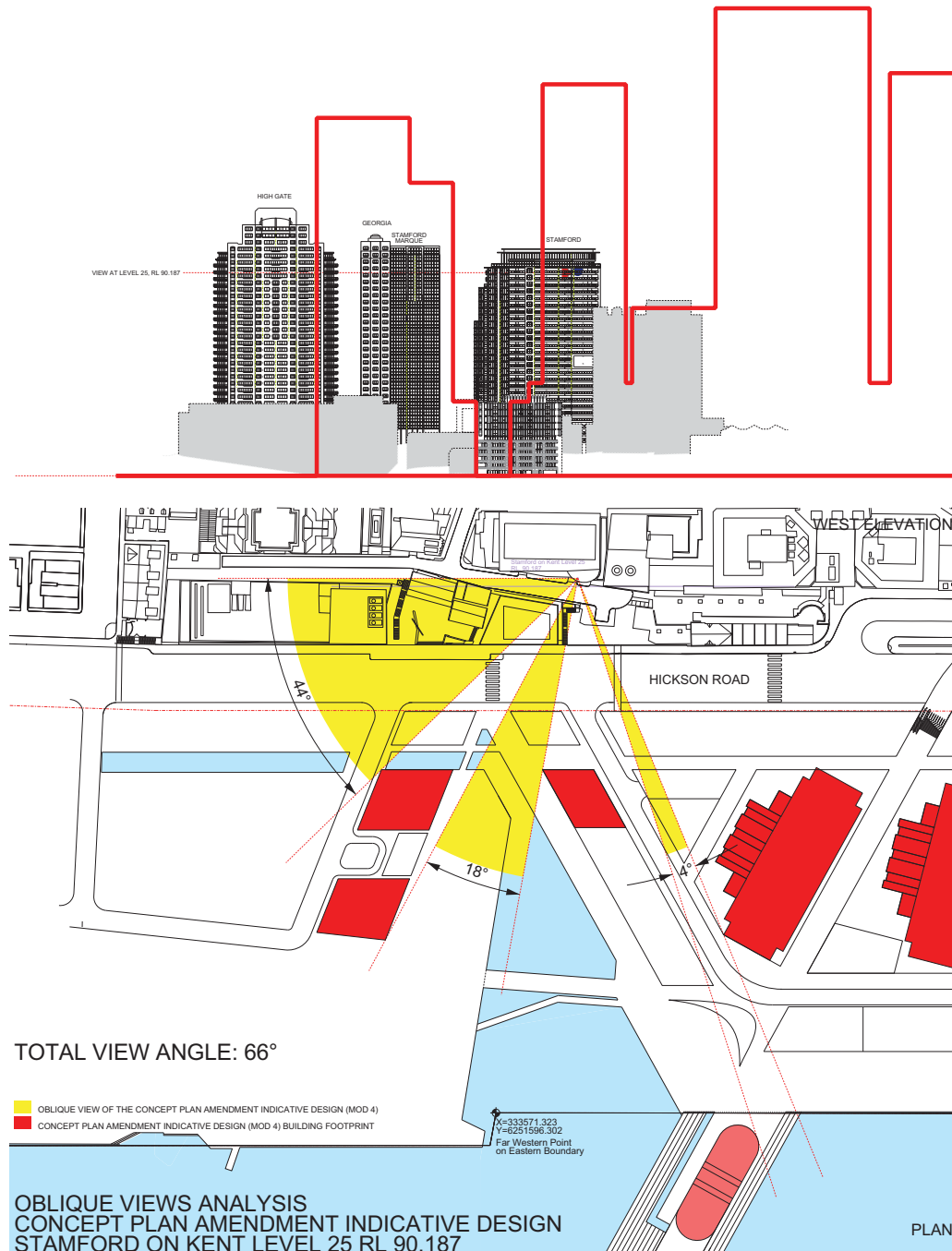


Image showing view from Level 25 from Stamford on Kent  
Proposed Concept Plan Amendment (MOD 4) Indicative Design



Provided from animation by Virtual Ideas



# Conclusion of View Analysis from Existing Residential Units.

This analysis indicates that the results to the most northerly building, Highgate, are largely unchanged as they are parallel to the edge of the site and therefore do not suffer a northerly view reduction.

This also largely applies to the Georgia but opens up southerly views at low and high level. The Stamford Marque benefits from the same and has more improved southerly views over the cove.

The Stamford on Kent benefits the most in terms of its low level views as it is placed partially in front of the increased view cone and therefore enjoys the benefits of the fan viewing cone of the buildings around the cove.

In addition it should be noted that the distance from the Kent Street residential buildings to the primary residential tower on the Barangaroo South is circa 100m. By comparison the typical CBD residential buildings are separated by a street width of 20m.

Although the distance from the Kent Street residential buildings to the Hotel building is 310m, and to commercial tower C3 is 215m, they have still been considered in the view analysis.

In conclusion we believe the view sharing outcome achieved in the Approved Concept Plan is achieved through the Proposed Concept Plan Amendment (Mod 4) Indicative Design.

	Total Oblique View Angle using approved Concept Plan (ACP2)	Total Oblique View Angle using Concept Plan Amendment (mod4)	Difference	Conclusion
Highgate Level 15	91°	94°	+3°	View greater than 54 ° is maintained
Highgate Level 25	129°	94°	-35°	View greater than 54 ° is maintained
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Table of oblique views

Approved Concept Plan	View loss in total units when compared to the Concept Plan Amendment (mod4)	View gain in total units when compared to the Concept Plan Amendment (mod4)	Balance
Option 1 (ACP1)	113	52	-61
Option 2 (ACP2)	80	43	-37
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Table of orthogonal views

