

Proposed Shell Filling Station  
Parklands, Western Cape

**Visual Impact Assessment**

Draft  
March 2013



Prepared  
Bernard Oberholzer  
Landscape Architect and Environmental Planner

In association with  
Quinton Lawson, MLB Architects and Urban Designers

Prepared for  
ERM Southern Africa (Pty) Ltd

on behalf of  
Shell SA Marketing (Pty) Ltd

## CONTENTS

<i>Section 1: Introduction</i>	4
<i>Section 2: Description of the project in terms of visual considerations</i>	5
<i>Section 3: Description of the affected environment</i>	6
<i>Section 4: Identification of applicable policies, legislation, standards and guidelines</i>	8
<i>Section 5: Specification of relevant visual thresholds</i>	8
<i>Section 6: Identification of key visual issues</i>	8
<i>Section 7: Alternatives considered in the impact assessment</i>	9
<i>Section 8: Visual Assessment Criteria</i>	9
<i>Section 9: Visual Mitigation Measures</i>	14
<i>Section 10: Conclusion and Recommendation</i>	16

### References

### Tables

<i>Table 1: List of facilities at the Parklands site</i>
<i>Table 2: Landscape description of the Parklands site</i>
<i>Table 3: Criteria for Visual Buffers</i>
<i>Table 4: Key visual issues</i>
<i>Table 5: Potential Visibility</i>
<i>Table 6: Visual Assessment Criteria</i>
<i>Table 7: Synthesis of Visual Impacts/ Benefits</i>
<i>Table 8: Significance of Visual Impacts before and after Mitigation</i>

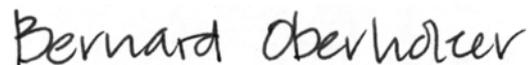
### Figures

<i>Fig. 1 Shell Parklands: Locality Map</i>
<i>Fig. 2 Shell Parklands: Viewpoints</i>
<i>Fig. 3 Shell Parklands: Nominal Viewshed</i>
<i>Fig. 4 Shell Parklands: 3D Model (Option 4)</i>
<i>Fig. 5 to Fig.8 Shell Parklands: Photomontages</i>
<i>Fig.9 Shell Parklands: Viewpoint with mitigation</i>

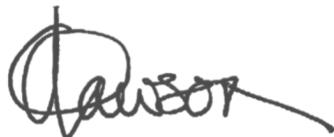
Proposed Shell Filling Station, Parklands: Visual Impact Assessment  
March 2013

### Statement of Independence

The authors declare that they are independent practitioners with expertise and wide experience in visual impact assessments, that the study has been carried out in an objective manner and complies with the relevant EIA regulations, and that all material information in their possession, which may influence a decision by the competent authority and the objectivity of the study, has been disclosed.



Bernard Oberholzer Landscape Architect  
Professional Member South African Council of the Landscape Architects Profession (SACLAP)



Quinton Lawson, MLB Architects and Urban Designers  
Professional Member South African Council of the Architects Profession (SACAP)

### Expertise

Bernard Oberholzer has a Bachelor of Architecture (UCT) and Master of Landscape Architecture (U. of Pennsylvania), and has more than 20 years experience in undertaking visual impact assessments. He has presented papers on *Visual and Aesthetic Assessment Techniques*, and is the author of *Guideline for Involving Visual and Aesthetic Specialists in EIA Processes*, prepared for the Dept. of Environmental and Development Planning, Provincial Government of the Western Cape, 2005.

Quinton Lawson has a Bachelor of Architecture Degree (Natal) and has more than 10 years experience in visual assessments. Bernard and Quinton have both been involved in visual assessments for a wide range of residential, heritage, industrial and renewable energy projects.

## **SECTION 1: INTRODUCTION**

### **1.1 SCOPE OF THE STUDY**

This visual impact assessment (VIA) forms part of a Basic Assessment (BA) being undertaken by ERM. The assessment is for a proposed filling station and add-on services (shop, restrooms etc.) in Parklands, near Cape Town. The scope of the visual study includes the following:

- Quantify and assess the existing scenic resources / visual characteristics on and around the proposed site.
- Evaluate and classify the landscape in terms of its sensitivity to a changing land use.
- Determine viewsheds, view corridors and important viewpoints to assess visual impacts of the proposed project.
- Determine visual issues, including those identified in the public participation process.
- Review the legal framework that may have implications for visual / scenic resources.
- Assess the significance of potential visual impacts resulting from the proposed project for the construction, operational and decommissioning phases of the project.
- Identify possible mitigation measures to reduce negative visual impacts for inclusion into the project design, including input into the Environmental Management Plan (EMP).

### **1.2 LIMITATIONS AND ASSUMPTIONS**

Detailed information on the design of the filling station and ancillary facilities, such as building elevations, finishes and colours, are based on drawings provided by Shell. It was assumed that the filling station would be similar to other Shell filling stations in the region.

### **1.3 LOCATION OF THE SITE**

The site location is indicated on Fig. 1. The site is an undeveloped piece of land on the corner of Sandown and Wood Drive in Parklands. The site is surrounded by relatively new residential, commercial and educational uses, (see images in Section 3).

### **1.3 APPROACH AND METHODOLOGY**

The methodology used for the baseline study included the following steps:

- Photographic survey of the site and surroundings during a field trip in June 2012;
- Mapping of the proposed site, including distance circles and critical viewpoints;
- Mapping of the viewshed, using an aerial photograph to determine the area that would be visually affected;
- Identification and rating of potential visual impacts using a number of quantitative and qualitative criteria.
- Determination of significance of potential visual impacts using standard environmental assessment indicators.

## SECTION 2: DESCRIPTION OF THE PROJECT IN TERMS OF VISUAL CONSIDERATIONS

Key aspects of the proposed filling station and related facilities that have visual implications are summarised in Table 1 below, and in Figure 4. It is intended that the proposed development would include a shop, restrooms and undetermined future development. Various layout options have been provided, but the footprints are roughly the same.

**Table 1: List of Facilities at the Parklands Site**

<i>Facility</i>	<i>Footprint</i>	<i>Height</i>	<i>Comments</i>
Site area	7 841m <sup>2</sup>	n/a	Flat corner site.
Building footprint	689m <sup>2</sup>	3.95m	Filling station, shop, rest rooms.
Canopy and Paved forecourt	695m <sup>2</sup> (canopy)	5.35m	Steel canopy structure, with corporate Shell red and yellow colours. Dispensing islands with fuel pumps.
Underground storage tanks	5 tanks x 23m <sup>3</sup>	n/a	Below ground level with manhole covers. Storage of petroleum and diesel fuels.
Access roads, parking and loading bays	38 parking bays	n/a	Black tarmac surfaces.
Car wash bays	approx. 90m <sup>2</sup> (3 washbays)	3m	Plastered masonry and glass with steel roof.
Detail bays	approx. 93m <sup>2</sup> (4 bays)	±3m	Assumed steel frame and shade cloth.
Signage tower, entry/exit signs	n/a	7m	Includes illuminated signs.
Future developments	undetermined	unknown	Uses and finishes unknown.
Future development parking	12 parking bays	n/a	Black tarmac surfaces.
Area lighting	n/a	unknown	Type and height of lighting masts unknown.
Landscaping			Unknown.
<i>Construction Stage:</i>			
material stockpiles			Temporary stockpiles during construction.
Construction offices	cabins	Single storey	Temporary prefab structures.
Hoarding	perimeter	2m	Temporary hoarding

### SECTION 3: DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site is briefly described in Table 2 below, including visual characteristics. Viewpoints and distances are indicated on Figure 2, and photographs of the existing situation are shown below.

*Table 2: Landscape Description of the Parklands Site*

<i>Location</i>	The site is Erf 5940 situated on a vacant corner property, being a relatively busy intersection of Sandown Road and Wood Drive in Parklands, just north of table View between the R27 coastal route and the N7 National Road. It is an area that is becoming increasingly urbanised as the city expands northwards.
<i>Zoning</i>	A portion of the land is zoned 'residential' and a portion of the land is not currently zoned. A rezoning application is currently underway (ERM, Comments and Responses Report).
<i>Physical landscape</i>	The site consists of light grey sandy soils and is generally flat with no surface drainage or other landscape features. The site is disturbed and has little or no vegetation.
<i>Surrounding land uses</i>	Adjacent residential development varies from single storey to 3 storeys generally surrounded by high perimeter walls. Each parcel of development has been designed as an 'island', mostly inward looking with internal parking courts. A large shopping centre surrounded by parking lies diagonally opposite the intersection, and a college is situated to the north, separated by Sandown Road and a vacant site.
<i>Visual character of the area</i>	The area has a suburban character, consisting of relatively new residential and commercial development, of medium density. The individual developments have varied architectural building styles. Street planting is new and therefore trees provide little visual screening.
<i>Opportunities and constraints</i>	There are no specific visual constraints, although the immediately adjacent residential developments on three sides would be visually affected to some extent, and could therefore be considered visually sensitive. The existing intersection is busy in terms of traffic and noise. The filling station and shop could be viewed as an amenity for the local residents.



Existing residential development to the east and south of the site. Some residences are orientated to the north overlooking the site of the proposed filling station.



Existing residential developments to the west of the site. These do not generally overlook the site of the proposed filling station.



The existing shopping centre, including the 'Checkers Hyper' to the north-west of the proposed filling station.



The existing college to the north of the site of the proposed filling station, across a vacant piece of land.

#### **SECTION 4: IDENTIFICATION OF APPLICABLE POLICIES, LEGISLATION, STANDARDS AND GUIDELINES**

The following legislation could apply to visual assessments:

The National Environmental Management Act (NEMA) and the Regulations in terms of Chapter 5 of NEMA. (Act No. 107 of 1998). The activities associated with the project trigger an EIA in terms of the EIA regulations.

The National Heritage Resources Act (NHRA) (Act No. 25 of 1999) and the associated provincial regulations provide protection for listed or proclaimed sites, such as urban conservation areas, nature reserves and proclaimed scenic routes.

There are no known protected sites or scenic routes in the vicinity of the Parklands site.

#### **SECTION 5: SPECIFICATION OF RELEVANT VISUAL THRESHOLDS**

A visual assessment involves both qualitative, as well as quantitative criteria, to determine changes and possible adverse effects on the environment and the sense of place of the particular location. There are no prescribed thresholds for visual impacts, except for good civic manners in terms of protecting views, but these cannot be easily quantified.

#### **SECTION 6: IDENTIFICATION OF KEY VISUAL ISSUES**

A public participation process is being followed as part of the Basic Assessment. Some questions have been raised regarding potential visual and noise impacts, (ERM, Comments and Responses Report). Possible issues identified by the visual specialists are summarised in Table 4 below. The issues are not seen as impacts, but more as concerns that need to be addressed in the visual assessment.

**Table 4: Key Visual Issues**

<i>Potential visual intrusion on sense of place</i>	The residential character of the immediate area could potentially be altered by the proposed filling station facilities. The area is however becoming urbanised and includes other commercial facilities.
<i>Potential effect on views</i>	Depending on the height and siting of the proposed filling station and its forecourt canopy, views across the site from adjacent residences could be affected.
<i>Potential effect of lights at night</i>	There would be an increase in the amount of lights and noise emanating from the proposed filling station, particularly if it is open for 24 hours.

<i>Potential effect of construction</i>	The scale of the proposed project could result in visual and noise effects relating to the construction phase. At the end of the life of the project, many of the foundations and roads would remain, although it is likely that the site would be re-developed.
---	--

## **SECTION 7: ALTERNATIVES CONSIDERED IN THE IMPACT ASSESSMENT**

Only the current site is being considered in this assessment. A number of alternative site layouts have been provided by ikhayaletu, but these differ only marginally in terms of the configuration of roads and parking. Therefore the preferred alternative [has](#) been used for purposes of 3D modelling and for the photomontages.

## **SECTION 8: VISUAL ASSESSMENT CRITERIA**

A series of both quantitative and qualitative criteria are used to determine potential visual impacts.

### **(1) Viewpoints** (Fig. 2 and Table 5)

Viewpoints were selected based on potentially prominent or sensitive viewing positions in the area, where views of the proposed filling station may be obtained. The proposed project would be potentially visible from Sandown Road, Wood Avenue and surrounding residential complexes.

### **(2) Visibility**

Visibility tends to be determined by distance between the proposed filling station and the viewer, as well as by the surrounding buildings. Given the height and footprint of the proposed project and related infrastructure, visibility tends to be significant up to distances of about 250m. Distance radii shown in Fig. 2 assist in quantifying visibility of the proposed facilities. Degrees of visibility in relation to distance are based on field observations (see Table 5):

Highly visible:	Clearly noticeable within the observer's view frame 0 to 100m
Moderately visible:	Recognisable feature within observer's view frame 100-250m
Marginally visible:	Not particularly noticeable within observer's view frame 250-500m
Hardly visible:	Practically not visible unless pointed out to observer 500m+

### **(3) Visual Exposure**

Visual exposure is determined by the viewshed or view catchment, being the geographic area within which the proposed project would be visible. The viewshed boundary in an urban context tends to be determined by the surrounding buildings, which would create view shadows. The visual exposure of the project in this case would be fairly localised, and extends mainly to the north as indicated in Fig. 3.

**(4) Visual Sensitivity**

Visual sensitivity is determined by distinctive features in the landscape or townscape. The project site and surroundings are flat, and there are no heritage or other distinctive features in the immediate area. The surroundings to the east, west and south of the project consist of residential type development, which could be sensitive to this type of filling station project.

**(5) Landscape Integrity**

Visual quality is enhanced by intactness of the landscape or townscape, and lack of visual intrusions. There are no existing visual intrusions in the Parklands suburban landscape, such as communication masts or power lines. There is a small electrical substation in the eastern corner.

**(6) Visual Absorption Capacity**

The visual absorption capacity of the landscape, or the potential to screen the project, is not an issue in the Parklands context. Furthermore the filling station by nature requires adequate visibility.

**(7) Cumulative Visual Impacts**

The proposed filling station will add to the commercial activities in a residential area. The area, however, is in the process of becoming more urbanised. Further development of the filling station site with additional uses is not known at this stage.

**(8) Overall Intensity of Visual Impacts**

The overall intensity of potential visual impacts is determined from a summation of all the above criteria, using a scoring method to rate the visual impacts as indicated in Tables 6 and 7 below. The rating assessment is assisted by an examination of the photomontages of the proposed filling station as shown in Figures 5 to 8.

**Table 5: Potential Visibility** (see Fig. 2)

<b>View Point</b>	<b>Location</b>	<b>Distance</b>	<b>Comments</b>
<b>vp1</b>	Wood Drive Extension near circle	222m to canopy 219m to building 197m to 'future development'	The proposed project would be moderately visible from the entrances to the college and shopping centre, but views would be restricted once development occurs on land in the foreground.
<b>vp2</b>	Sandown Road (East) near electrical transformer	77m to building 59m to 'future development'	The proposed project would be clearly visible in the foreground from this street corner and adjacent houses.
<b>vp3</b>	Sandown Road (North side) at future junction	92m to building 70m to 'future development'	The proposed project would be clearly visible across Sandown Road.
<b>vp4</b>	NW corner of Sandown / Wood Drive intersection	90m to canopy 102m to building 92m to 'future development'	The proposed project would be clearly visible across the intersection.
<b>vp5</b>	West side of Wood Drive to the SW of site	45m to canopy 70m to building	The proposed project would be clearly visible in the foreground from residential development across Wood Drive.
<b>vp6</b>	East side of Wood Drive to the SW of site	28m to canopy 52m to building	The proposed project would be clearly visible in the foreground from residential development adjacent to the site.
<b>vp7</b>	SE corner of site on Pembury Crescent	47m to canopy 23m to building	The proposed project would be clearly visible in the foreground from residential development on Pembury Crescent.

Table 6: Visual Assessment Criteria

Criteria	Comments	Filling station	Lighting	Signage
<b>Visibility of facilities</b> Distance from selected viewpoints	The filling station and related buildings would be highly visible from adjacent residential development. Visibility from the Sandown Road and Wood Avenue visual corridors would extend about 250m. Beyond this visibility is restricted by surrounding residential and commercial buildings.	Moderate-high 4	Moderate-high 4	Moderate 3
<b>Visual exposure</b> Zone of visual influence or view catchment	The visual exposure, or view catchment, is restricted by the surrounding buildings. Views tend to be along the Sandown Road and Wood Drive visual corridors.	Moderate 3	Moderate 3	Moderate-low 2
<b>Visual sensitivity</b> Landscape features	There are no distinctive landscape, townscape or heritage features in the immediate area. The adjacent residential development, with views across the site, would be considered sensitive receptors.	Moderate-high 4	Moderate-high 4	Moderate 3
<b>Landscape Integrity</b> Effect on character of the area	The proposed filling station and related infrastructure would contrast with the adjacent residential uses and affect the residential quality of the area. There are however similar filling stations in the Parklands urban area.	Moderate 3	Moderate 3	Moderate-low 2
<b>Visual absorption capacity (VAC)</b> Potential for concealment	The site is flat and open with no screening vegetation. The surrounding buildings however, provide some screening effect when seen from the roadway visual corridors.	Moderate 3	Moderate 3	Moderate-low 2
<b>Cumulative visual impact</b>	The general area is zoned for residential and commercial type land uses. The filling station would add some cumulative visual impact to those of other commercial facilities in the area.	Moderate 3	Moderate 3	Moderate 3
<b>Overall intensity</b>	Consideration of the above criteria taken as a whole.	<b>Moderate-high (20)</b>	<b>Moderate-high (20)</b>	<b>Moderate (15)</b>

**Rating Scale:**

- 1 very low visual impact
- 2 low visual impact
- 3 moderate visual impact
- 4 moderate-high visual impact
- 5 high visual impact

**Rating Scores:**

- 0-6 very low visual impact
- 6-12 low visual impact
- 12-18 moderate visual impact
- 18-24 moderate-high visual impact
- 24-30 high visual impact

*Table 7: Synthesis of Visual Impacts / Benefits*

<b>Criteria</b>	<b>Comments</b>	<b>Filling station</b>	<b>Lighting</b>	<b>Signage</b>
<b>Intensity or magnitude of impact</b> Degree of visual impact.	See ratings in Table 6.	Medium-high	Medium-high	Medium
<b>Spatial extent</b> Degree of influence over a geographic area - local, district, regional or national.	Very localised. Only marginal visual effect beyond 250m.	Local	Local	Local
<b>Duration</b> Projected life-span of the proposed project.	Potentially longer than 15 years.	Long-term	Long-term	Long-term
<b>Probability</b> Degree of possibility of the impact occurring.	Would definitely occur. (Some opportunity to screen buildings with walls and tree planting).	Highly probable	Highly probable	Highly probable
<b>Confidence</b> Degree of confidence in predictions.	Based on available information and photomontages.	High	High	High
<b>Overall significance</b>	Synthesis of criteria	<b>Medium-high</b>	<b>Medium-high</b>	<b>Medium</b>

## **SECTION 9: VISUAL MITIGATION MEASURES**

The purpose of this section is to recommend practical design and management actions for the project, which will avoid, minimise, mitigate or compensate for potential negative impacts and enhance benefits. Some of these mitigations are illustrated in Fig. 9.

### **9.1 DESIGN PHASE MITIGATIONS**

- 1) Commercial buildings should ideally be clustered, possibly around an internal court, to avoid the visual scatter of isolated buildings on the site.
- 2) The facades should be modulated to provide scale in sympathy with the surrounding residential development.
- 3) Consideration should be given to introducing pitched roofs to be more congruent with the surrounding roofscape.
- 4) There should be no access roads, parking bays, wash bays or detail bays within the 5m building line to allow adequate space for a tree-planted buffer strip on the eastern and southern boundaries of the site.
- 5) A dense tree-planting belt should be created on the perimeter between the filling station and the adjacent residential development. The Sandown Road and Wood Drive street frontages should also be landscaped.
- 6) A landscape plan should be prepared by a qualified landscape architect and form part of the building plan submission to the local authority.
- 7) All yards and storage areas to be enclosed by masonry walls or screens.
- 8) The forecourt apron and parking bays should be paved with brick or other unit pavers to minimise expansive asphalt areas.
- 9) External lighting should be confined to the dispensing forecourt, commercial outlets and other essential areas.
- 10) Lights should be low-level, where possible, and fitted with reflectors to avoid light spillage.
- 11) Lights and signage should be fixed to buildings or walls, where possible, to avoid unnecessary masts and visual clutter.
- 12) Signage related to the enterprise should be confined to the tower, canopy and entrances. Other corporate or advertising signage and flags should be avoided or restricted.

### **9.2 CONSTRUCTION PHASE MITIGATIONS**

- 1) The construction site, material stores, stockpiles and lay-down area should be kept tidy.
- 2) Measures to control wastes and litter should be included in the contract specification documents.
- 3) Wind-blown dust from stockpiles and construction activities, should be controlled.
- 4) An environmental management plan (EMP) should be prepared and an environmental control officer (ECO) employed for the duration of the construction.

### 9.3 OPERATIONAL PHASE MITIGATIONS

- 1) Litter and waste should be effectively managed to avoid visual problems in the area.
- 2) Noise, especially at night, should be kept to a minimum.
- 3) Buildings and landscaping should receive on-going maintenance to avoid visual decay.

### 9.4 DECOMMISSIONING PHASE MITIGATIONS

- 1) At the end of the life of the project unneeded structures should be demolished and removed from the site.
- 2) Unneeded roads, parking and other paved areas should be broken up and the site re-instated or redeveloped.

*Table 8: Significance of Visual Impacts before and after Mitigation (Options 1 and 5)*

	Comments	Significance before mitigation	Significance after mitigation
<b>Significance: filling station</b>	Significance is related to the industrial-commercial nature of the project in a residential area, including reliance on lighting and signage. However the urban nature of the Sandown Road corridor and the presence of other commercial activities reduce the significance marginally.  Mitigation through architectural measures and the planting of trees would reduce significance over time.	<u>Medium-high significance</u>	<u>Medium significance</u>
<b>Significance: lighting</b>	Significance is related to the need for bright lighting at night for the dispensing forecourt, and for signage, probably on a 24-hour basis.  Mitigation through careful lighting design and the use of reflectors, as well as tree planting, would reduce significance.	<u>Medium-high significance</u>	<u>Medium significance</u>
<b>Significance: signage</b>	Significance is related to the need for identifiable corporate and direction signage, most of which has to be illuminated at night.  Mitigation through careful siting and design of signage could reduce significance.	<u>Medium significance</u>	<u>Medium-low significance</u>
<b>Status</b>		<u>Negative</u>	<u>Negative</u>

## **SECTION 10: CONCLUSION AND RECOMMENDATIONS**

The site for the proposed filling station is surrounded on three sides by residential development, with a shopping centre and college to the north of Sandown Road. The area is rapidly becoming urbanised, and similar filling stations are found along important routes in the locality.

The site would require a re-zoning to permit a filling station, and being a listed activity, further requires a basic environmental assessment. This visual impact assessment forms part of the basic assessment. Filling stations, particularly if open for 24 hours, are not normally compatible immediately adjacent to residential areas. Mitigating circumstances in this case are that the medium density residential complexes are generally inward looking and do not therefore tend to orientate towards the street. Secondly, the filling station includes a convenience store, which could be of benefit to the local residents.

The proposed filling station would involve a potential nuisance factor in the form of lighting required for such a facility, as well as noise, particularly during the night. On the other hand, the nature of the urban area means that the visual influence of the proposed filling station would not extend beyond about a 250m radius.

Because of the close proximity of the adjacent residential development, only limited potential exists for visual screening of the proposed filling station. Nevertheless the mitigation measures outlined in Section 9 above are essential in order to reduce potential adverse impacts on receptors in the immediate area.

Based on the visual survey and photomontages, and using recognised visual criteria as a benchmark, the potential visual impact of the proposed filling station and lighting is expected to be of medium-high significance before mitigation and medium after mitigation. Signage would have a lower significance, being medium before mitigation, and medium-low after mitigation.

Little is known about the 'future developments' or other proposed development on the eastern portion of the site. In order to avoid additional cumulative impacts, it is recommended that light industrial uses, such as panel-beating, tyre or shock-absorber fitting uses not be considered in this location, and that only low-key commercial uses, such as convenience stores or restaurants, be permitted.

### *References*

ERM, May 2012. Background Information Document and Invitation to Comment: Proposed Shell Filling Station, Parklands, Western Cape Province.

ERM, undated. Comments and Responses Report.

Oberholzer, B. 2005. Guideline for Involving Visual and Aesthetic Specialists in EIA Processes. Edition 1. CSIR Report No. ENV-S-C 2005 053 F. Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

iKhayaletu, Feb 2013. Parklands Shell Service Station. Building Plans and Elevations.

iKhayaletu, Aug 2013. Parklands Option 2: Site Layouts, Sign Location and Facades.