

CITY OF VANCOUVER



# Vancouver's Views

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- Importance
- History
- Regulations & Administration
- Technology Response



# OED Definition

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- range of vision; extent of visibility (come into view; in full view of the crowd)
- what is seen from a particular point; a scene or a prospect (a fine view of the downs; a room with a view)



# Why are Views Important?

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They can be truly spectacular!



*and*

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# VIEW\$



Because we see them  
so infrequently!



# Views - A Short History

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- Towers
- Bartholomew Plan
- West End
- Project 200
- Central waterfront ODP
- BC Place



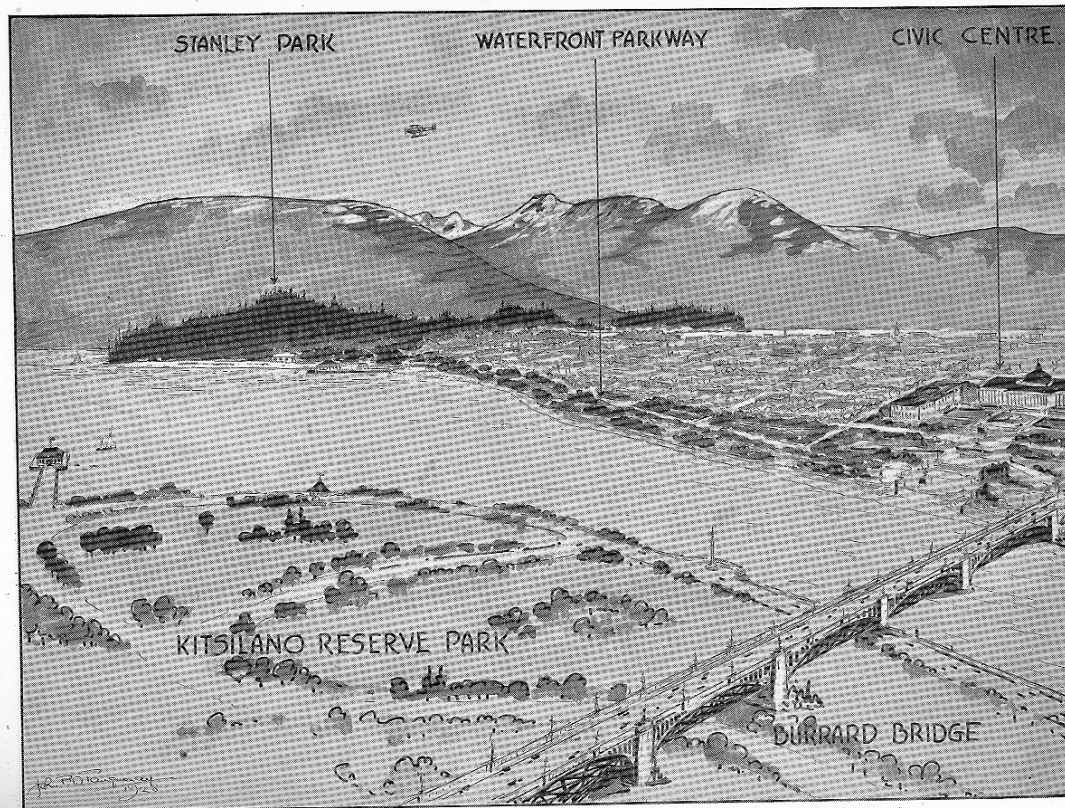


# Dominion Building

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# Bartholomew Plan 1928



Page 236

Plate 56



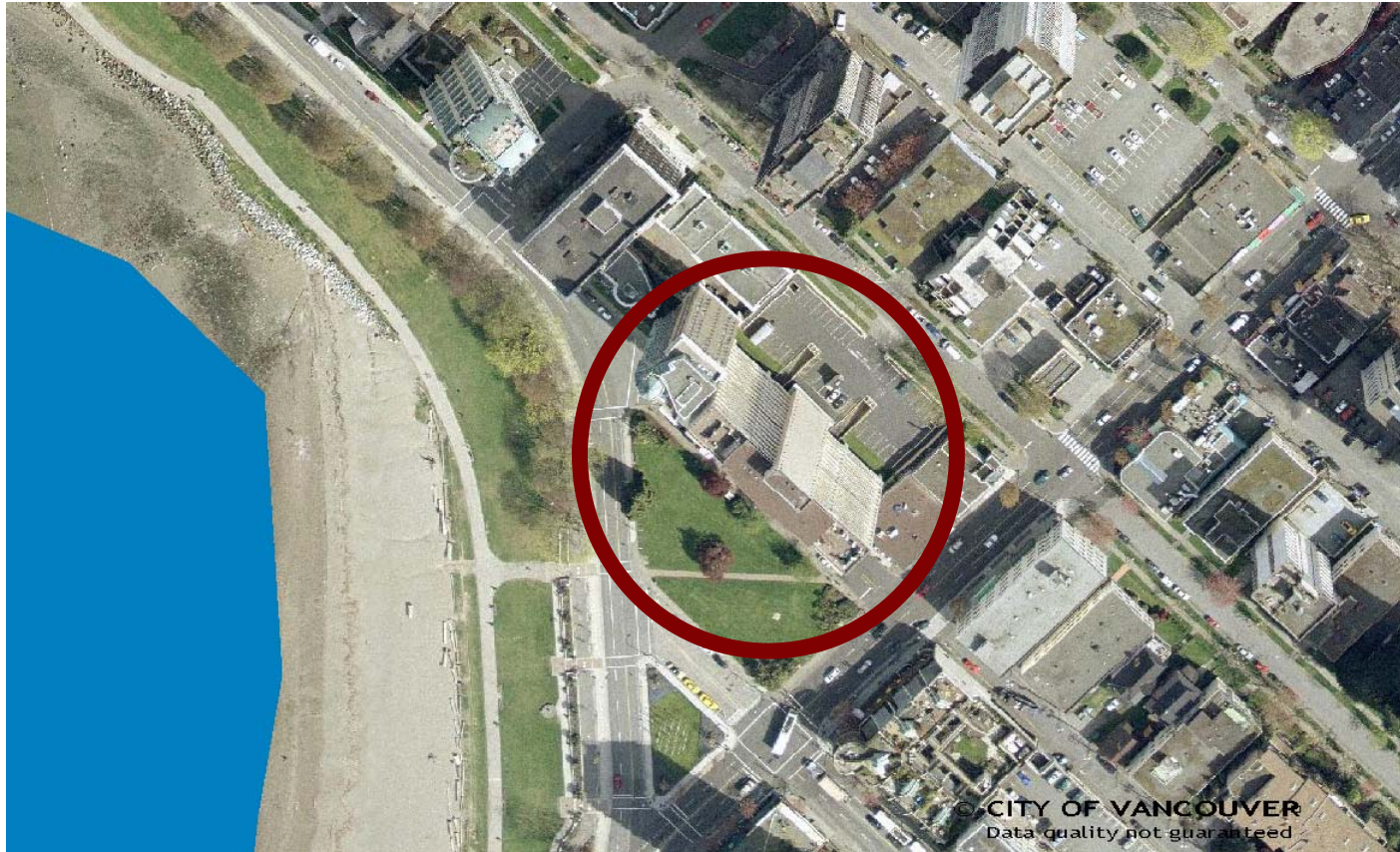
# Conserve Natural Beauties

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- Vancouver has been given a notable start toward greatness by nature. The marine Landscapes which have been placed about the city cannot be sold or easily destroyed. But they are now occasionally disfigured by a pall of unnecessary smoke. And too few vantage points have been created from which the waters of the Inlet and Bay and the mountain background may be viewed.
- There are few bits of natural scenery in Vancouver more deserving of protection than the views over English Bay. It will be a great loss to the people of the city if buildings or other obstructions are allowed to fill the space between Beach Avenue and the water.
- Harland Bartholomew 1929



# 1835 Morton Avenue

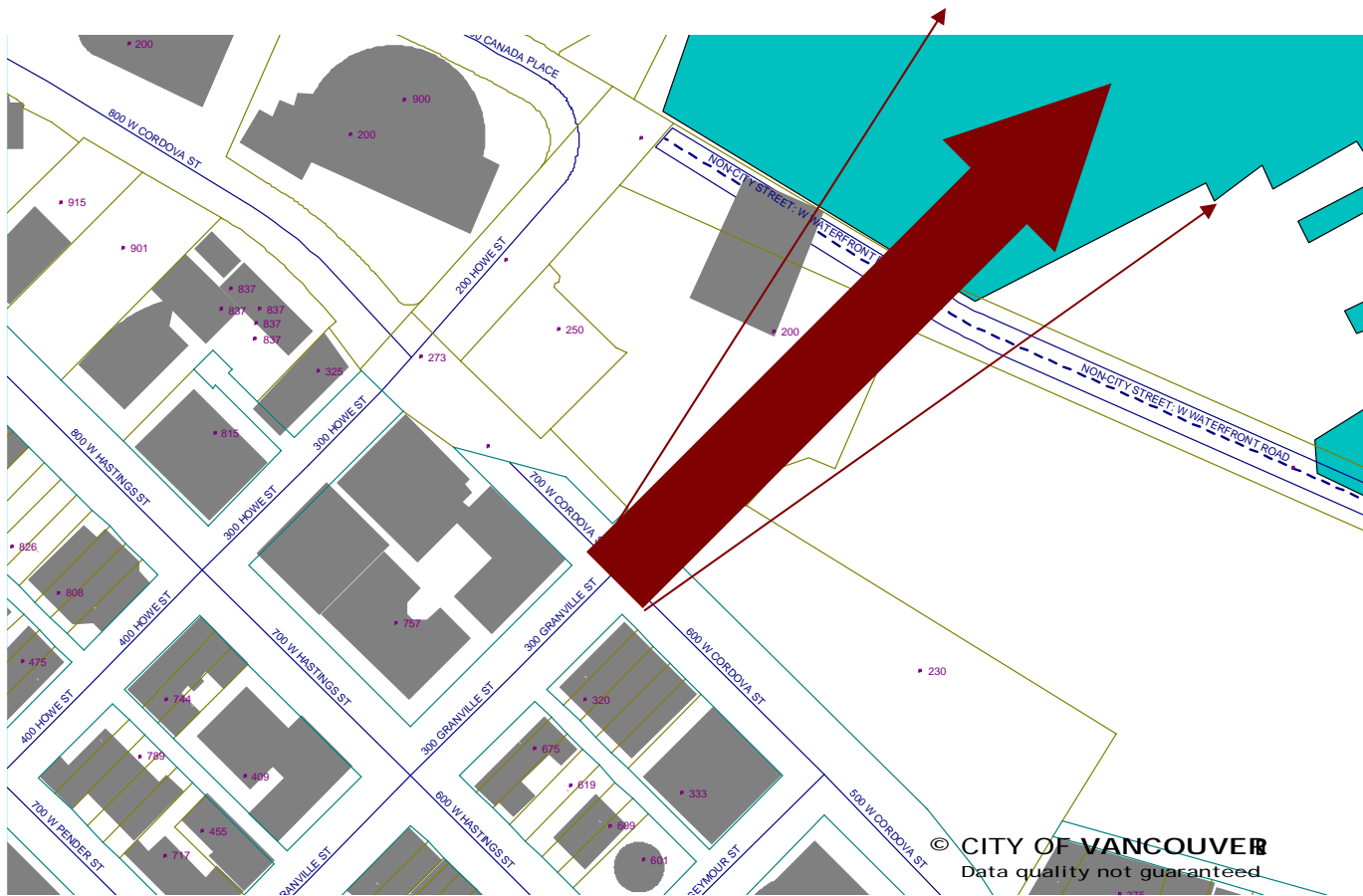


# Granville Square

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# Granville Square



# BC Place Project

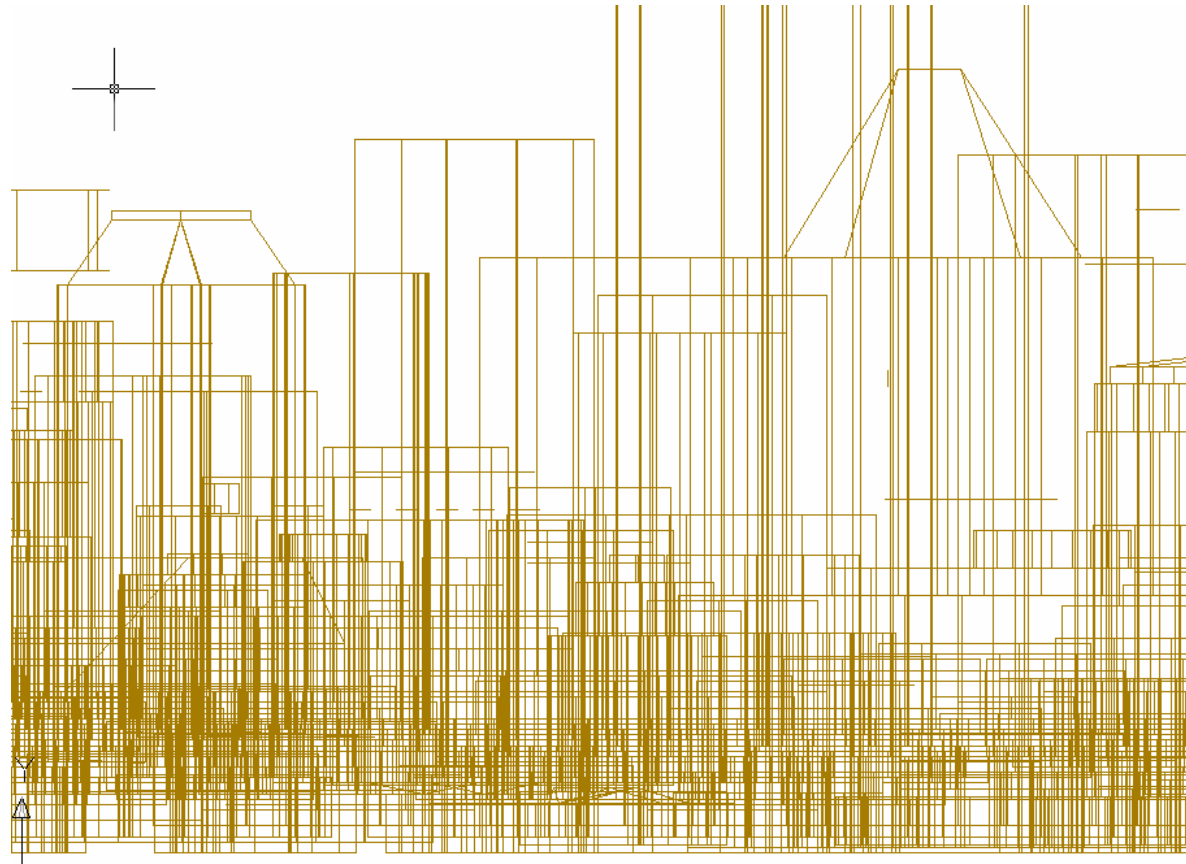
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- H.A. Simons - View Model
- Start of an ongoing relationship between views and the 3D model



# BC Place Project

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# Eighties: “Threatened” Views

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- Public poll: most citizens enjoy the City’s public views, particularly those of water and mountains
- Most feel important views are being lost as the Downtown develops
- City and consultant study



# Council Approved Views

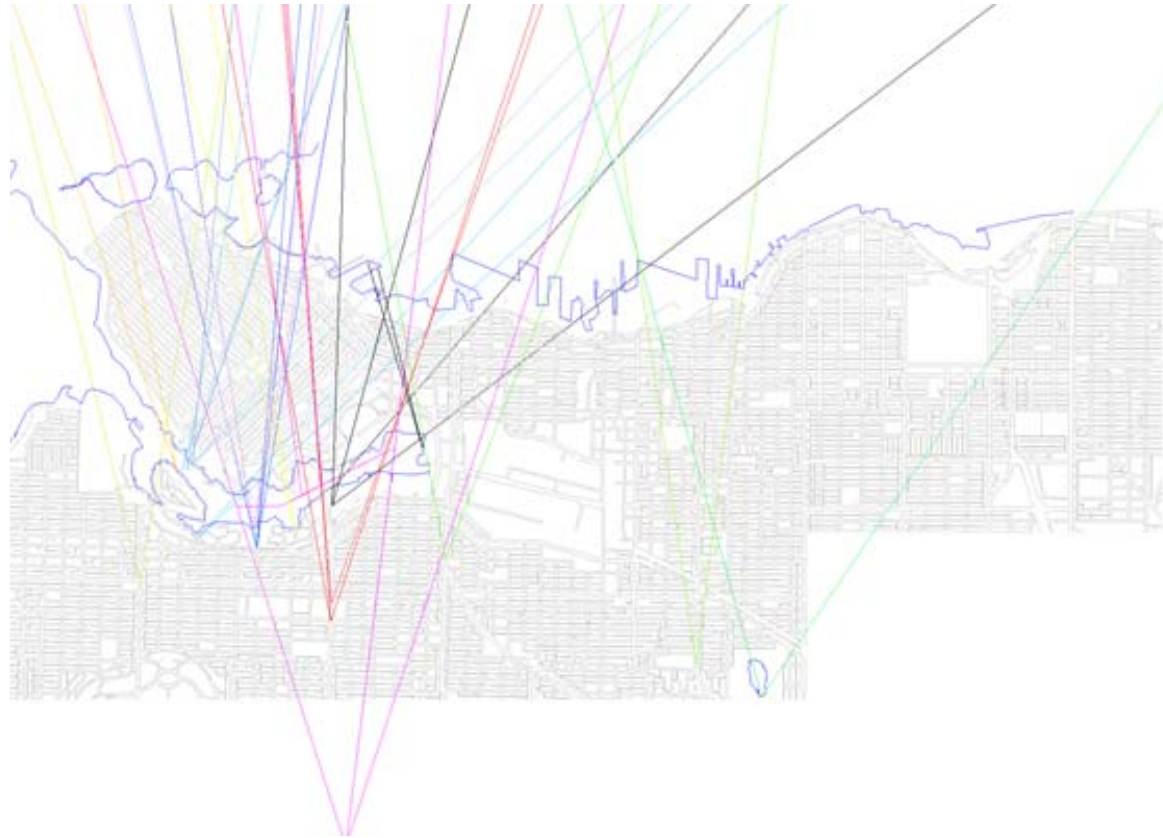
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- 1989: Council approves 27 protected views
- <http://www.vancouver.ca/vanmap/vanmappub.htm>



# View Cones

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# Quantifying the Views

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- View Cone?
- "The Formula"
- Maps
- Calculations
- Reference Sheets
- Guidelines
- consistency - accuracy - impartiality



# What Is A View Cone?

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- [http://www.vancouver.ca/commsvcs/planning/current\\_planning/views/composition.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/composition.htm)
- Subsections of a view cone
- View shadow
- View extents



# The Formula

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[http://www.vancouver.ca/commsvcs/planning/current\\_planning/views/formula.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/formula.htm)

$$\frac{Hx = (Dx)(Lr-Lv) - (LBx -Lv)}{Dr}$$



# The Formula - components

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- [http://www.vancouver.ca/commsvcs/planning/current\\_planning/views/formula.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/formula.htm)
- $L_v$  - elevation of view point
- $L_r$  - elevation of reference point
- $L_{bx}$  - elevation of site
- $D_x$  - distance from view point to site
- $D_r$  - distance from view point to reference point
- $H_x$  - maximum building height



# Reference Points

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- Finding a building that is just right...
- [http://www.vancouver.ca/commsvcs/planning/current\\_planning/views/view\\_C\\_1.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/view_C_1.htm)





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- Yes it does get complex!



# Calculation History

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- Calculator & Scales
- Spreadsheet & Scales
- AutoCAD & spreadsheet
- MapGuide & spreadsheet
- MapGuide & JavaScript (do it yourself)
- MapGuide (automated process)



# Hard Copy Maps

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- 1:2500 scale maps
- Limited accuracy
- Determining the actual extents of a view cone between existing and proposed buildings
- Contours and elevations



# Guideline



**City of Vancouver** Land Use and Development Policies and Guidelines  
Community Services, 437 W. 12th Ave Vancouver, BC V5Y 1Y6 T 604.873.3344 (tu 873.3360)  
planning@city.vancouver.bc.ca

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## VIEW PROTECTION GUIDELINES

Adopted by City Council December 12, 1989  
Amended December 11, 1990

City Council has adopted view cones to protect selected threatened public views. This document maps and lists those view cones and explains the process to be followed to determine if a site falls within a view cone.

Other documents including official development plans, area development plans and Council-adopted guidelines also include view protection measures which may further affect permissible height. Applicants should consult all the regulations and guidelines applicable to each site that could influence maximum building height.

### Process

#### How to Find Out if a Site is Affected by a View Cone

There are three view maps available: View Location Map 1 (False Creek), View Location Map 2 (Dutlying Areas), and View Heights Map 1 (Downtown South). Large-scale versions of the three maps are available from the Planning Department. The attached reduced-scale copies of View Location Maps 1 and 2 show the general position of each of the view cones.

Check both maps to see if view cones cross near the site. If so, the maximum building height could be less than the maximum height permitted by zoning. You should then contact the Planning Department for further assistance and to be referred to larger scale versions of the maps to correctly determine how much of the site falls within a view cone.

The attached lists, arranged in two groups, the False Creek view cones, and the Dutlying Area view cones, note the view point and view subject for each view cone.

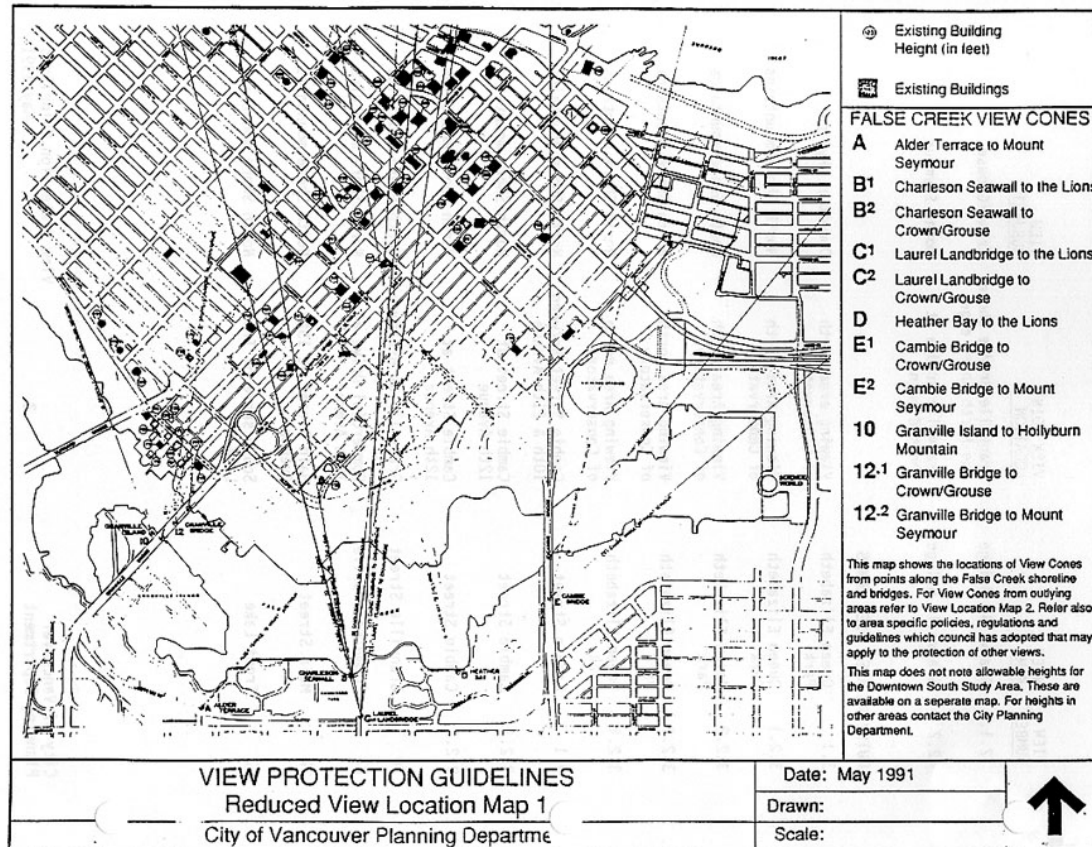
#### Calculation of the Maximum Building Height

View Location Map 1 and 2 only show the location of the view cones, they do not give the maximum building heights within them. Staff will calculate the maximum building height for each site falling within a view cone except in the case of the Downtown South where the maximum allowable height for each site crossed by a view cone has already been calculated and is noted on View Heights Map 1 (Downtown South).

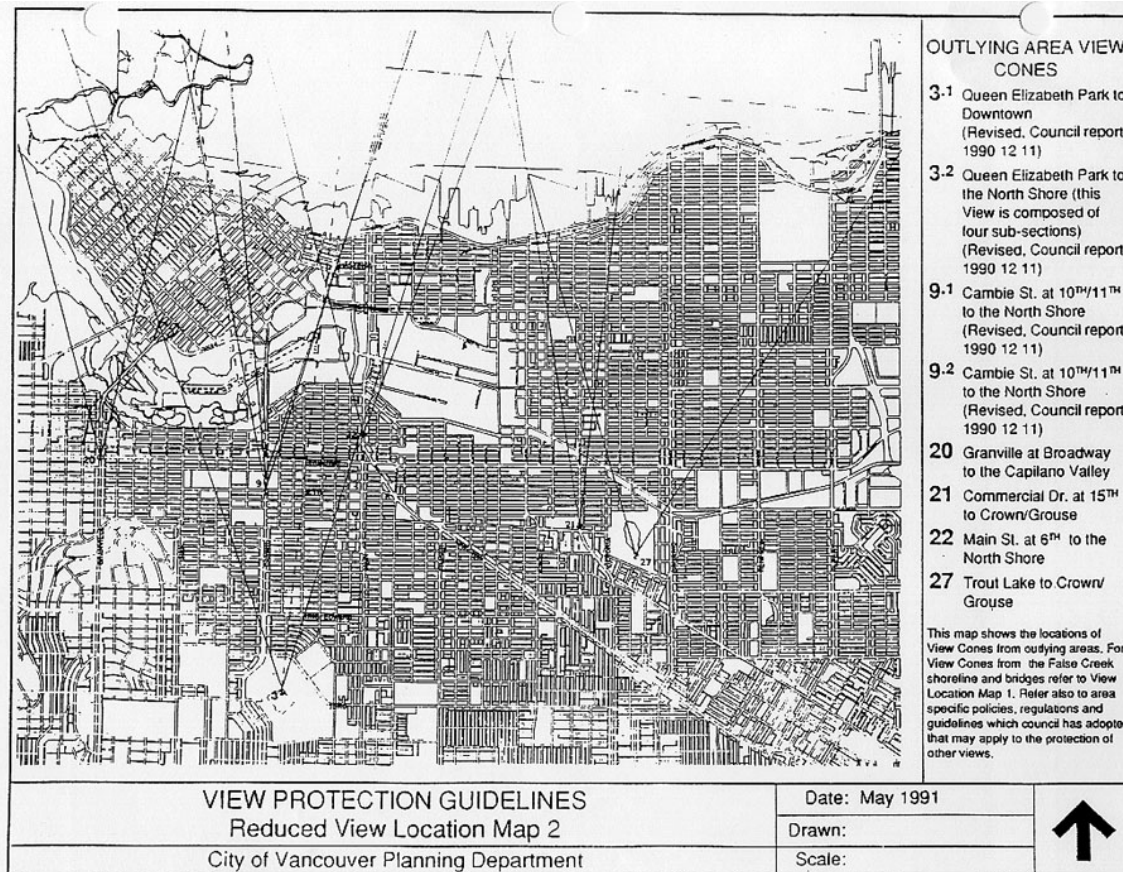
If a view cone crosses your site, it will not always restrict the maximum building height permitted by zoning. Factors such as topography and distance of the site from the view point influence view blockage and the resulting maximum height. In some cases, the maximum height that can be achieved without affecting a view is greater than the height limit specified in the zoning schedule or official development plan. In this circumstance, the zoning will take precedence.



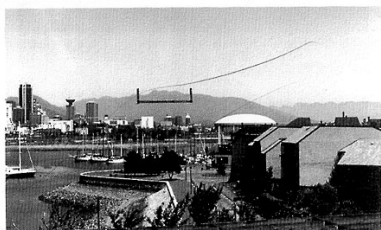
# Maps



# Outlying Areas Map



# View Reference Sheets

Vancouver Views: Council Approved View Cones Alder Terrace to Mount Seymour		A			
					
Photograph date: May 1990					
VIEW POINT: View platform at the foot of Alder Crossing North of Lamey's Mill Road					
VIEW FIELD: Mount Seymour					
SOURCE MATERIAL:					
To see the full extent of the view cone, refer to View Location Map # 2 (FALSE CREEK)					
HISTORY:					
Approved by City Council on December 12, 1989.					
<b>COMMENTS:</b> This view cone presently lacks an actual "reference point" building. This may change if development occurs on the Cambie/Robson site. The imaginary level is 300 ft. above the Robson and Cambie intersection.		Date:  Revision:			
<b>KEY REFERENCE DATA:</b>					
View Point	Viewcone Section	LV	Reference Point	Lr	Dr
Viewing platform at Alder Crossing		134	Imaginary level above Robson and Cambie	445	5810
<b>FORMULA TO CALCULATE MAXIMUM BUILDING HEIGHT</b>					
$Hx = \frac{Dx(Lr - Lv)}{Dr} + (Lr - Lv)$		Lv = Elevation of View Point Lr = Elevation of Reference Point Lb = Elevation of Site Dx = Distance from View Point to the Site Dr = Distance from View Point to Reference Point Hx = Maximum Building Height	<b>NOTE:</b> Elevations are in feet based on City datum. To obtain the metric equivalent subtract 91.57 feet from the elevation and then perform the metric conversion.		



# Excel Spreadsheet

Cambio Street at 10th/11th Avenue													
Cambio Street to North Shore Mountains													
date	view point	View sub-cone number	site location	view point elevation	reference point elevation	distance to reference point	distance to site (meters)	distance to site (feet)	elevation of site (feet)	maximum building height (feet)	Maximum height geodetic	reference point	Requester
25-Jul-95	Cambio St.	9.1	8th & Cambio s.	205	485	7818	120	393.70	160	59.10		Stock Exchange	request:Vivian Collier McCaulley Nicholls
31-Aug-95	Cambio St.	9.1	Marathon: w. of Canada Pl.	205	485	7818	3065	10055.77	101	464.15		Stock Exchange	request:Vivian Collier McCaulley Nicholls
31-Aug-95	Cambio St.	9.1	Port E. of Canada Pl.	205	485	7818	2580	8464.57	101	407.16		Stock Exchange	request:Vivian Collier McCaulley Nicholls
30-Nov-95	Cambio St.	9.1	Port E. of Canada Pl.	205	485	7818	2700	8858.27	101	421.26		Stock Exchange	request:Vivian Collier McCaulley Nicholls
14-May-96	Cambio St.	9.1	132 W. Hastings	205	485	7818	2481.68	8141.99	118	378.60		Stock Exchange	request:Vivian Collier McCaulley Nicholls
14-Mar-95	Cambio Street (10th/11th)	9.1	Granville & Dunsmuir (s/e cor)	205	495	7818	2400	7874.02	180	317.08		Stock Exchange	request:Mark Thompson (Musson Cattell)
14-Mar-95	Cambio Street (10th/11th)	9.1	X 8th ave. (old MEC site)	205	495	7818	202.15	663.22	185	44.60		Stock Exchange	request:MB Rondeau
18-Jun-96	Cambio Street (10th/11th)	9.1	Robson & Cambio (n/e corne)	205	495	7818	1824.3	5985.24	145	282.02		Stock Exchange	request:Ken King
21-Jul-97	Cambio Street (10th/11th)	9.1	Robson & Cambio (n/e corne)	205	495	7818	2416.1156	7926.89	175	324.04		Stock Exchange	Ben Fong
24-Jun-99	Cambio Street (10th/11th)	9.1	Beatty & Dunsmuir s/w corne	205	495	7818	2017.03	6617.55	154	296.47	90.36	Stock Exchange	Ben Steinberg (James Cheng)
24-Jun-99	Cambio Street (10th/11th)	9.1	Pacific & (Georgia)	205	495	7818	1820	5971.13	110.0052	316.49	96.47	Stock Exchange	Ben Steinberg (James Cheng)
											-6.10		
										19.16			
										154.231			
24-Jun-99	Cambio Street (10th/11th)	9.1	Beatty & Dunsmuir s/w corne	205	495	7818	2017	6617.45	154	296.47	90.36	Stock Exchange	Ben Steinberg (James Cheng)
24-Jun-99	Cambio Street (10th/11th)	9.1	Pacific & (Georgia)	205	495	7818	1820	5971.13	110	316.49	96.47	Stock Exchange	Ben Steinberg (James Cheng)
											-20.03		
								295.29					
								110.0052					





# Views Categories

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- Council Approved
- Approved as part of by-law /ODP
- Other (guidelines etc.)
- Non-regulated but important



# View Calculation Process

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- Public or Staff inquiry
- Determine which views affect site
- Calculate maximum height for each view cone and building grade
- Determine most restrictive views
- Present massing implications and maximum heights



# Order of Priority

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- Maximum height as specified in a bylaw
- Maximum height as specified in a view cone



# Impertinent Appurtenances

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- Everything counts...all those slender character giving elements tend to mount up!



# Combo Views



# Sample Result Image

- [http://www.vancouver.ca/commsvcs/planning/current\\_planning/views/massing.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/massing.htm)



# Before and After

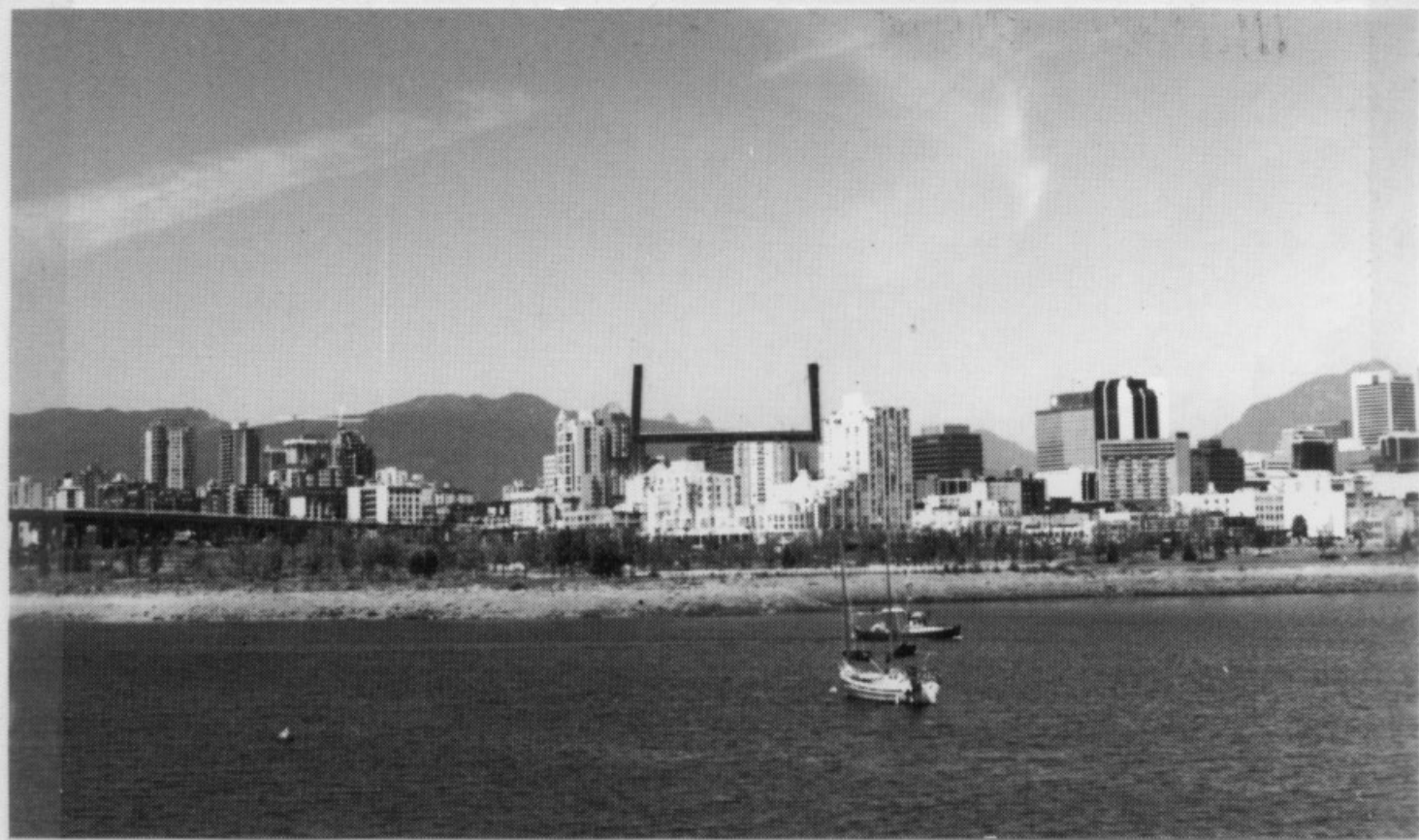
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- [www.vancouver.ca/commsvcs/planning/index.htm](http://www.vancouver.ca/commsvcs/planning/index.htm)



# Views & Time

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# Views & Time

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# Views & Time

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# Views and Time

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- **Is it a view if you can't see it?**
- [www.vancouver.ca/commsvcs/planning/current\\_planning/views/view\\_3\\_1.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/view_3_1.htm)



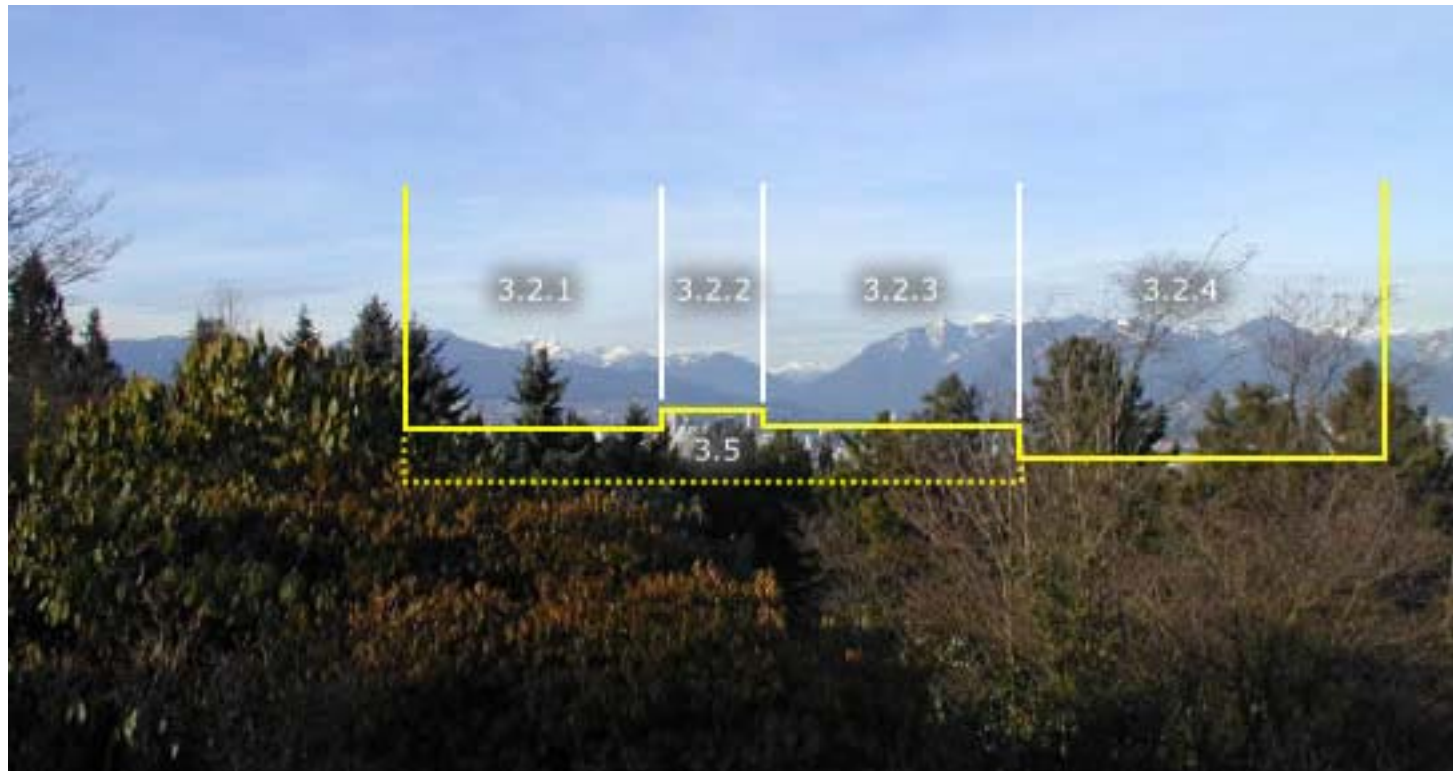
# Views & Time

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# Views & Time

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# View Protection of View Protection

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- The complexity of the Queen Elizabeth View Cone



# Views & 3D Model Technology Tool Kit

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- AutoCAD based
- Maintained with Autodesk Map & SketchUP
- Analysis & output Autodesk VIZ
- Web (Autodesk MapGuide) VanMap



# Views on the City Website

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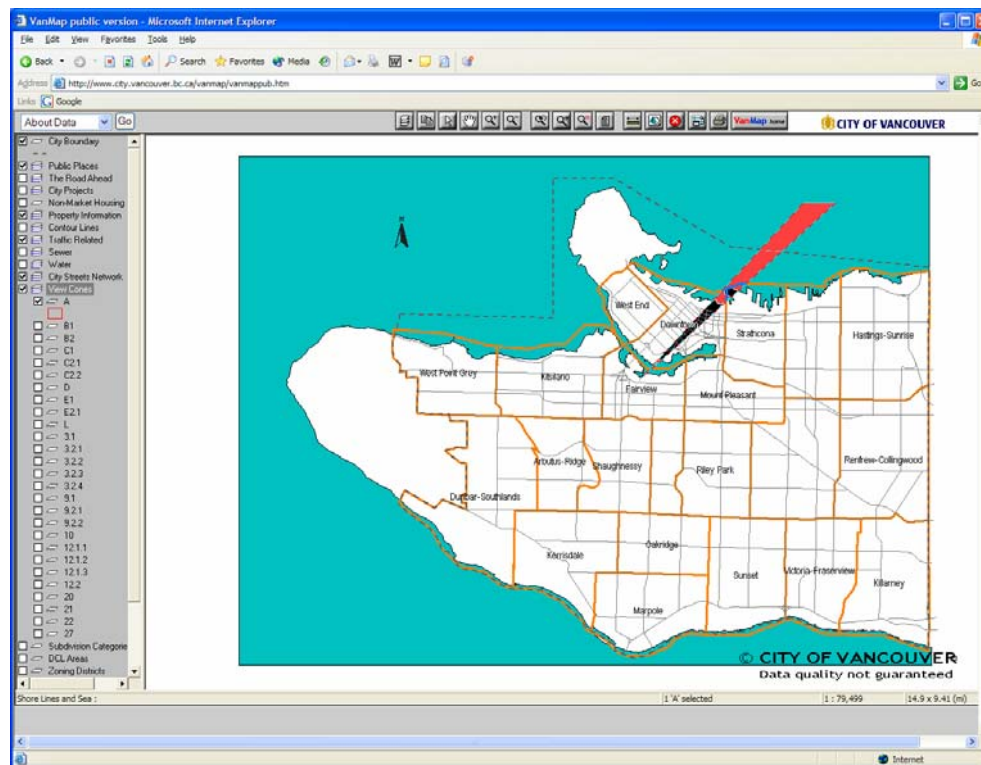
- [www.vancouver.ca/commsvcs/planning/current\\_planning/views/views.htm](http://www.vancouver.ca/commsvcs/planning/current_planning/views/views.htm)





# VanMap Views

- <http://www.vancouver.ca/vanmap/>



# New VanMap View Calculator

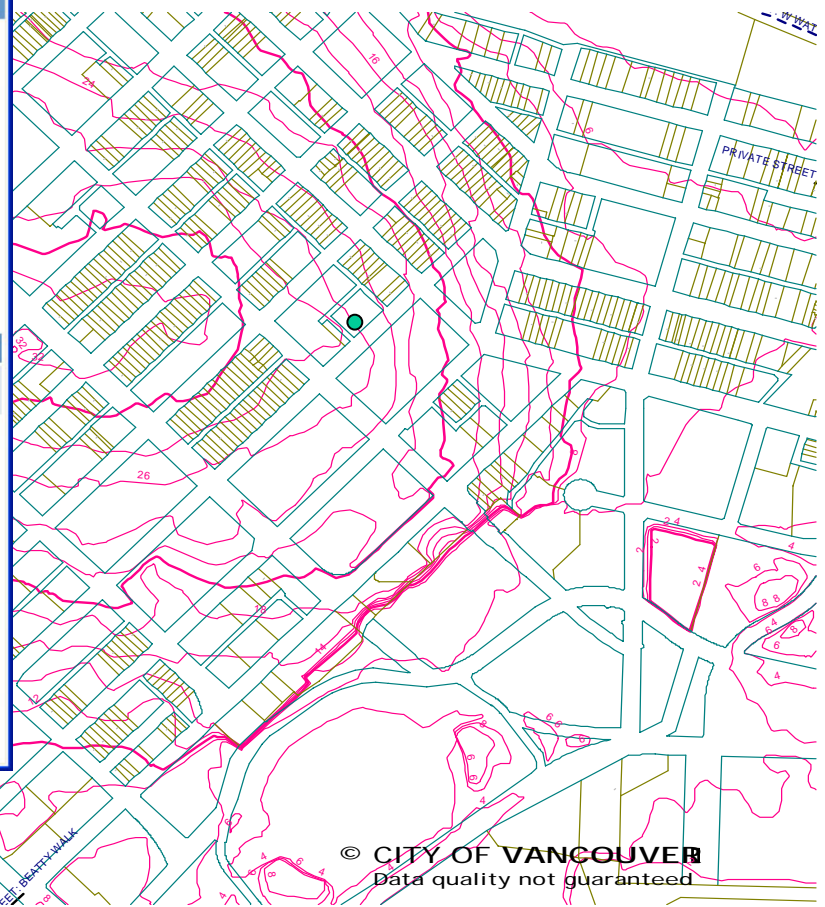
View Cone Application - Microsoft Internet Explorer

## View Cones

1.
2.
3. Enter site elevation  
  
OR
4.

### View Cone Calculation Records

Site Coordinates		ID	View	Site Elevation	Max Height
X	Y		Name		



# New VanMap View Calculator

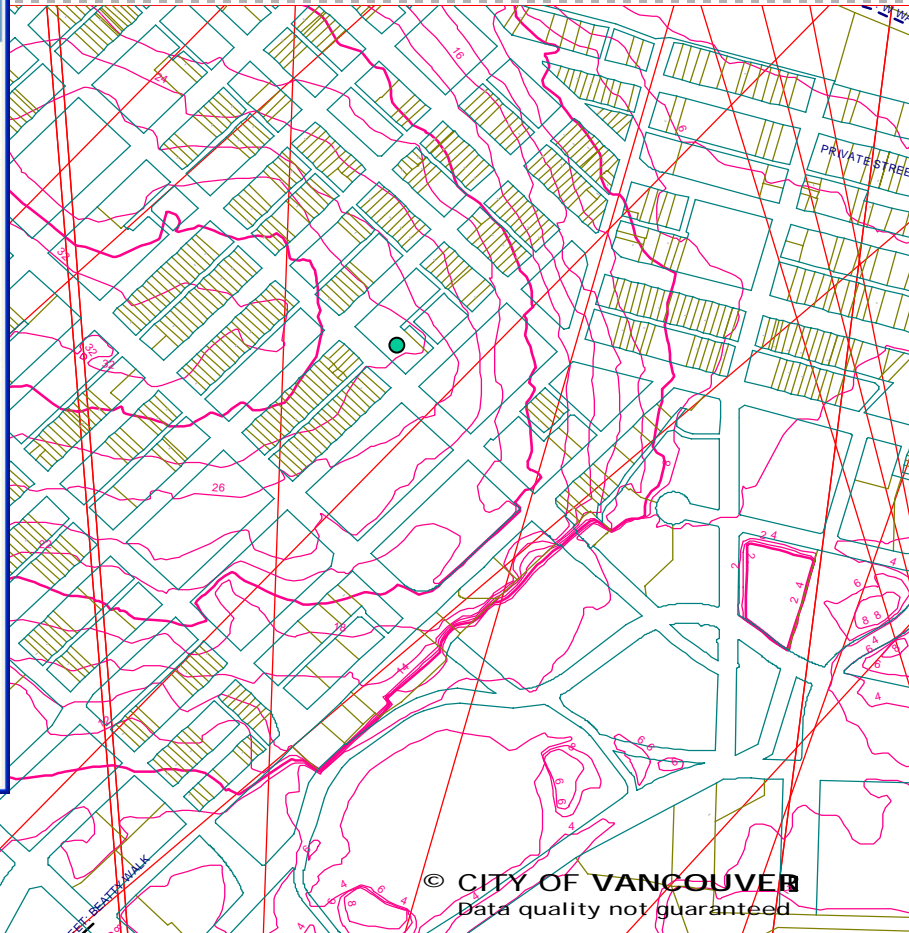
View Cone Application - Microsoft Internet Explorer

## View Cones

1.
2.
3. Enter site elevation  
  
OR
4.

### View Cone Calculation Records

Site Coordinates		ID	View Name	Site Elevation	Max Height
X	Y				



# New VanMap View Calculator

View Cone Application - Microsoft Internet Explorer

## View Cones

- Select Site Point
- Display View Cones
- Enter site elevation
  - Select Contour
  - OR
  - OK
- Calculate

Undo Reset ?

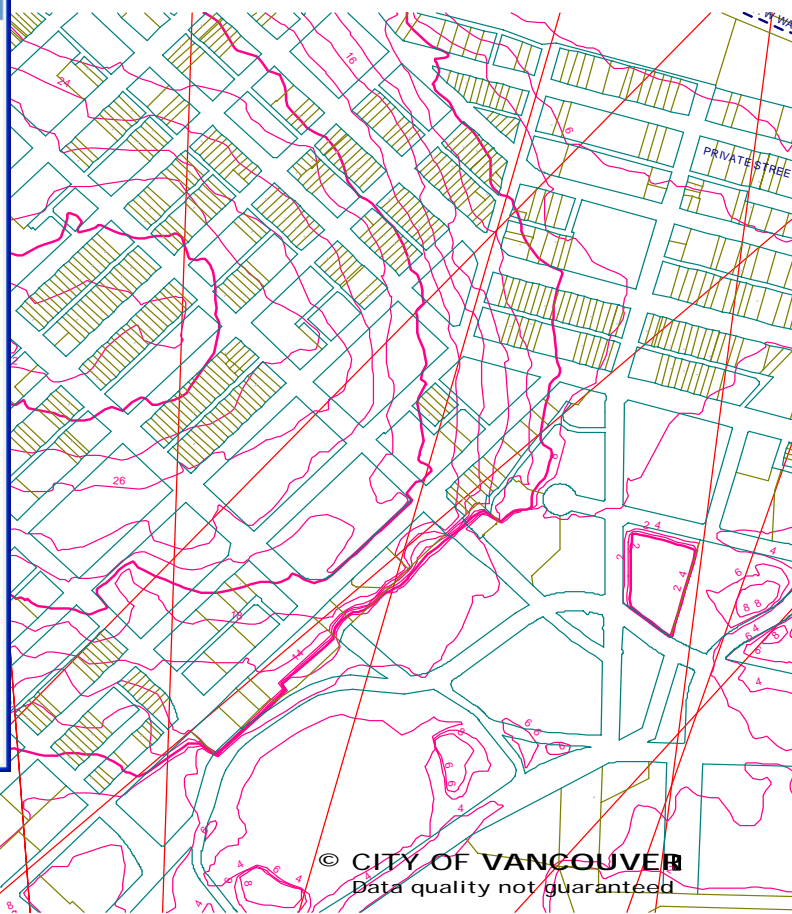
**Site Point:**  
 UTMX: 490710.5179995478  
 UTM Y: 5459130.814867194

**Crossing View Cones:**  
 12.1.1  
 12.1.2  
 12.1.3  
 3.2.1

**Contour Line:**  
 32 meter

### View Cone Calculation Records

Site Coordinates		View		Site Elevation	Max Height
X	Y	ID	Name		
490710.52	5459130.81	12.1.1	Granville Bridge to Crown/Grouse	32	100.02m
490710.52	5459130.81	12.1.2	Granville Bridge to Crown/Grouse	32	100.88m
490710.52	5459130.81	12.1.3	Granville Bridge to Crown/Grouse	32	103.10m
490710.52	5459130.81	3.2.1	Queen Elizabeth Park to the Downtown skyline and North Shore mountains	32	112.48m

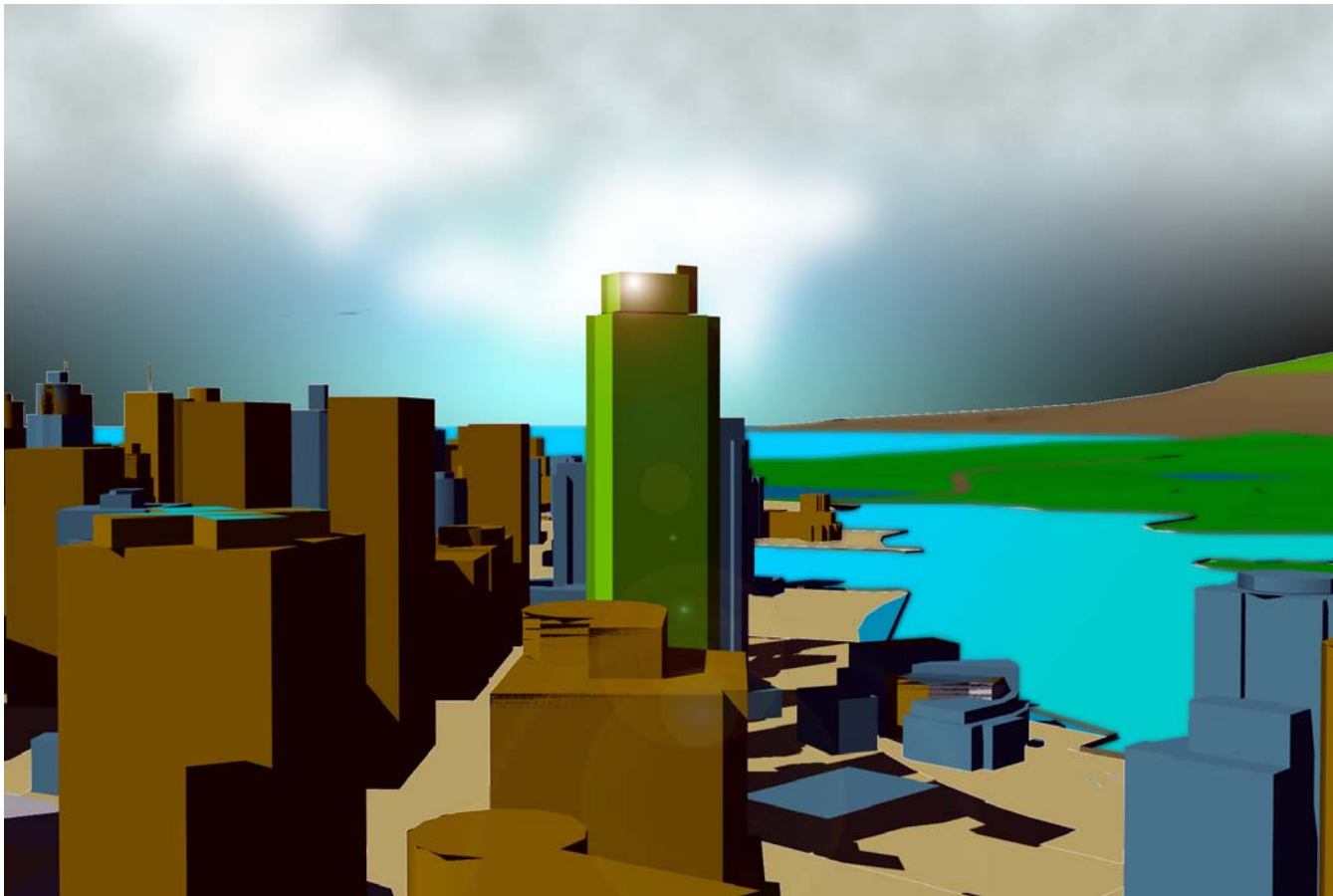


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 Data quality not guaranteed



# Views and Life Safety

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# Urban Design & View Protection

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- Sculpting the skyline
- Stationary and static views
- Collateral views
- Sequence



# Skyline Study

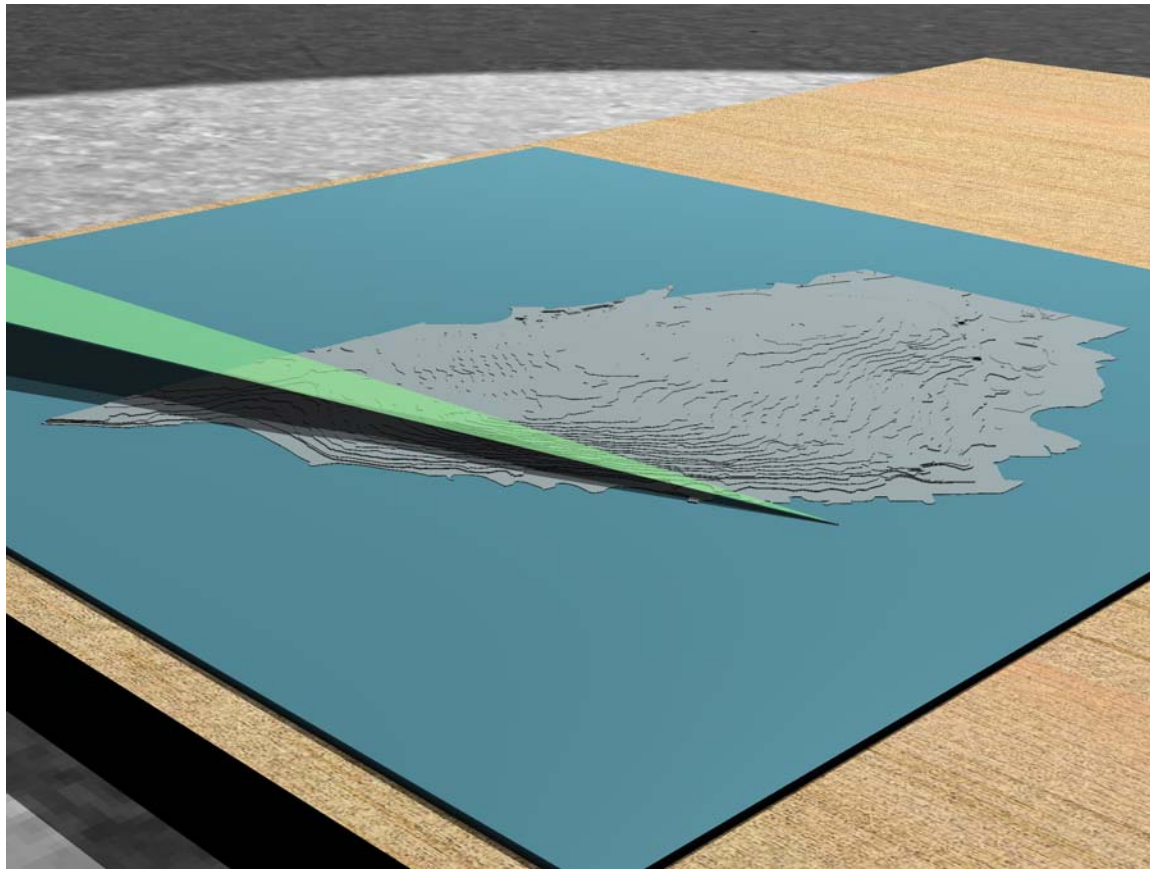
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- Vancouver's a boring skyline?
- Determined locations for "taller buildings", such as the Shaw Tower
- next...further exploration of sculpting the Downtown



# Skyline Study - Topography

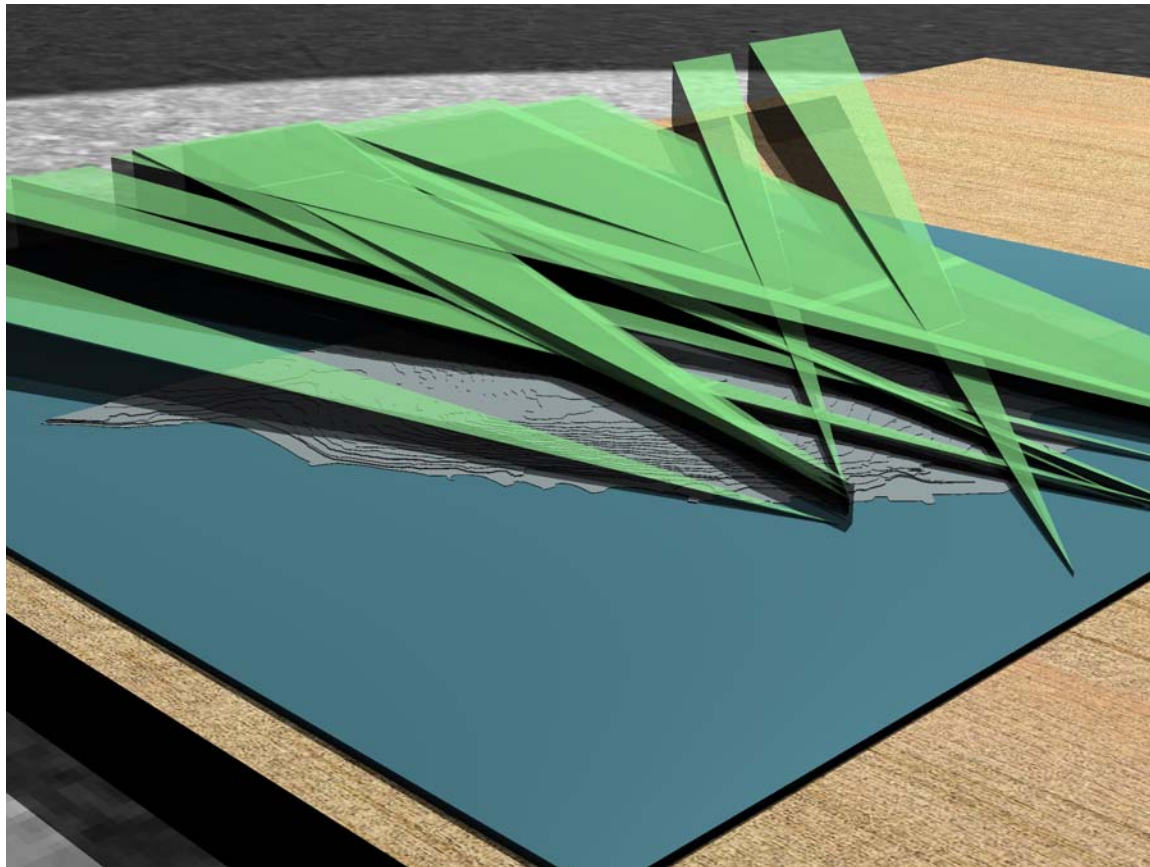
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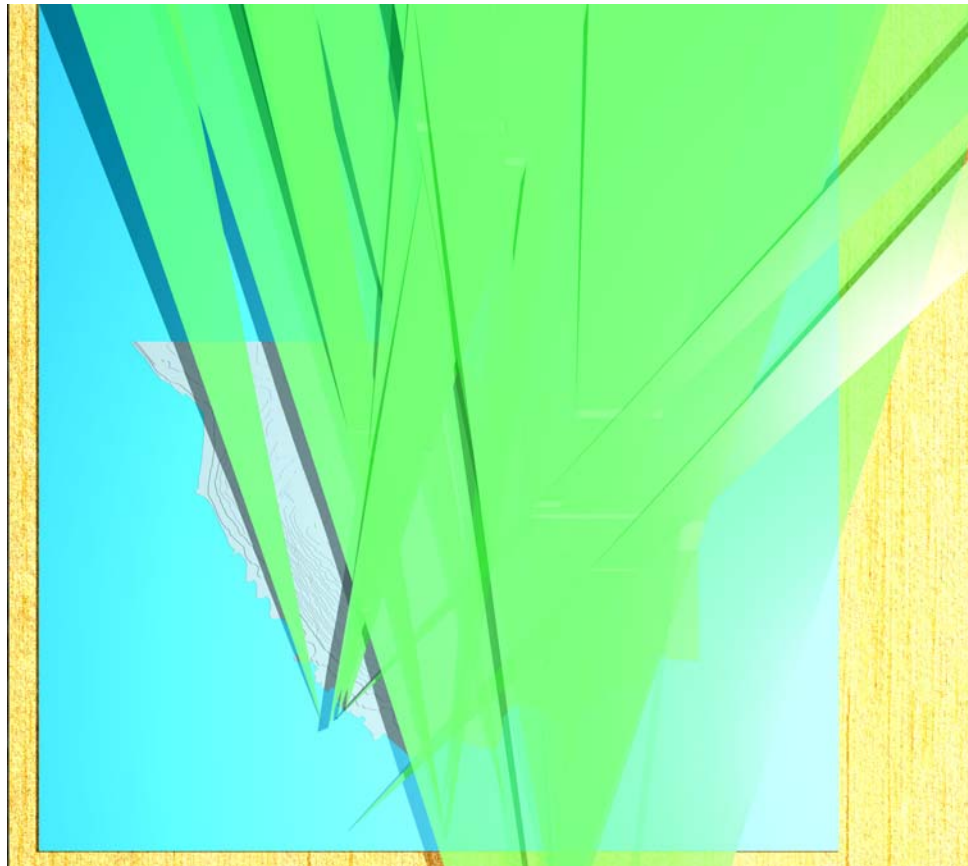
# Skyline Study- Views Overlay

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# Skyline Study - All Views

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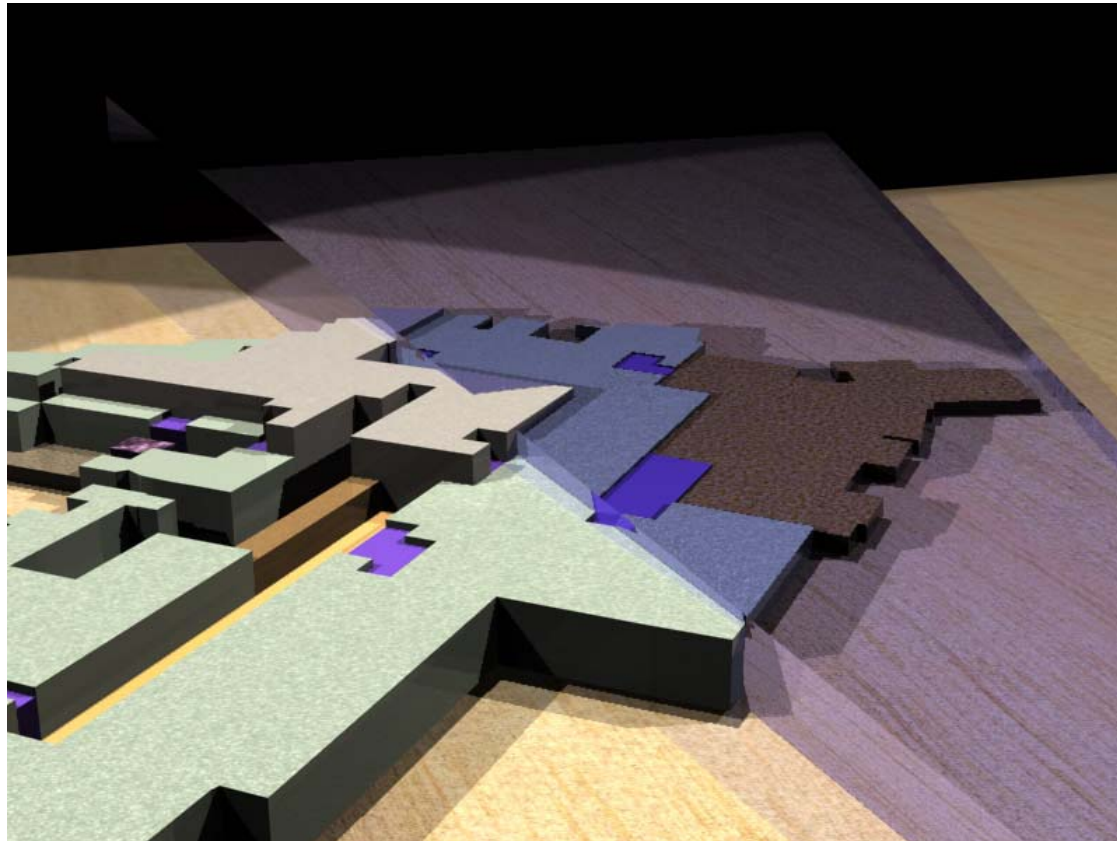
# Skyline Study - ODP Height Limits

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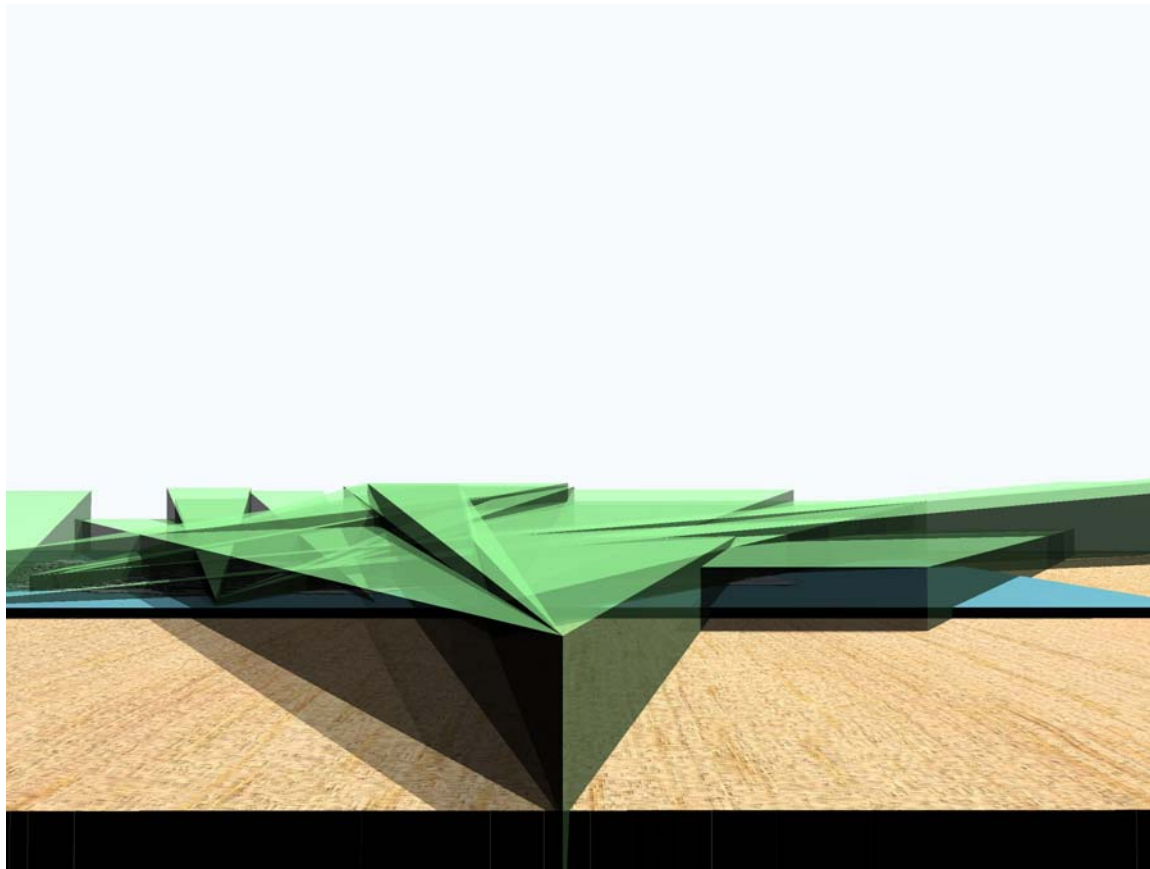
# Skyline Study - Boolean Action

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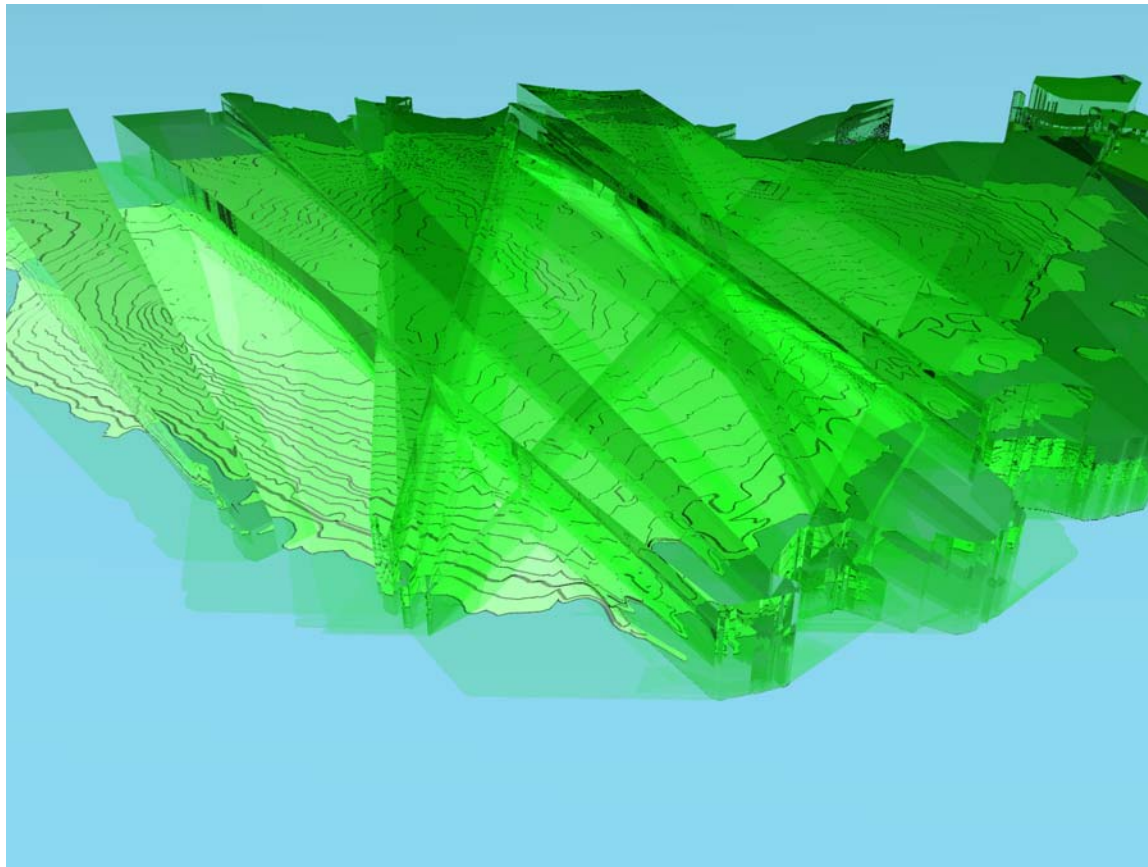
# Skyline Study - Built Form Views

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# Skyline Study - Built Form Views

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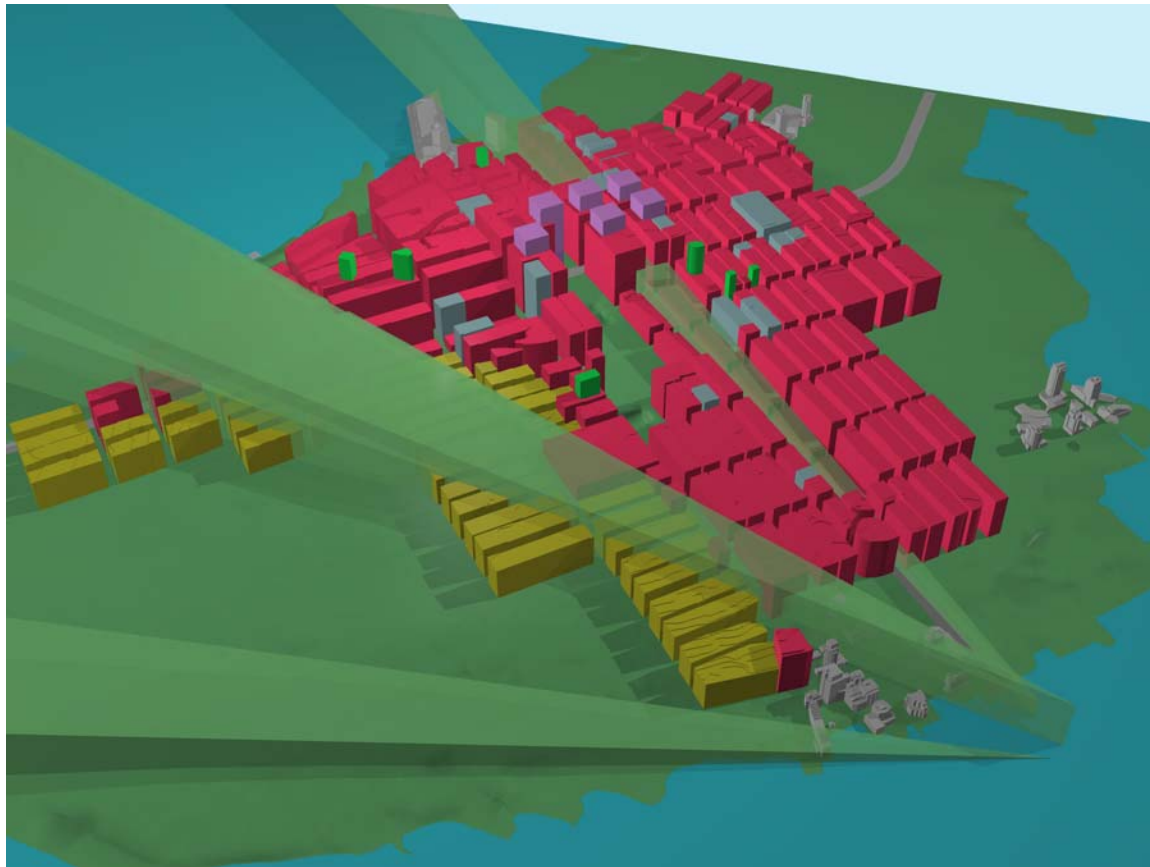
# Skyline Study - ODP built Form

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# Skyline Study - Boolean

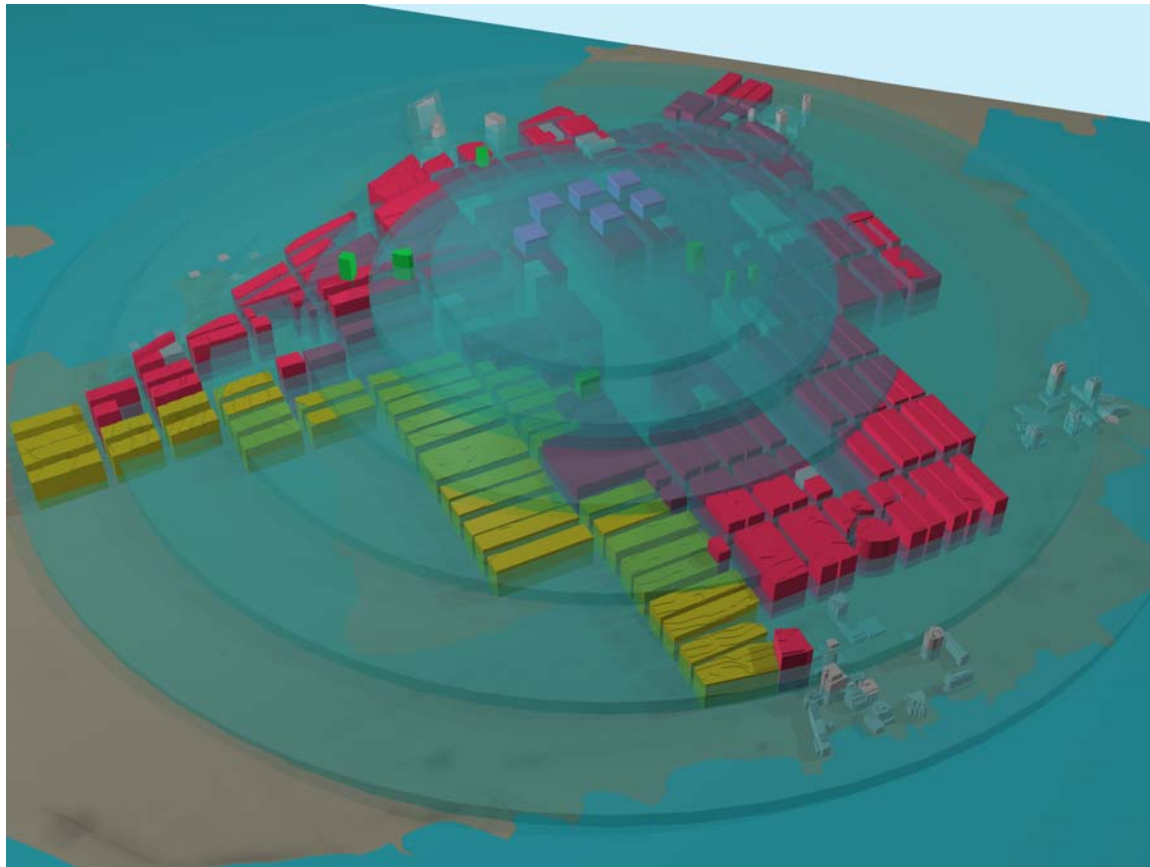
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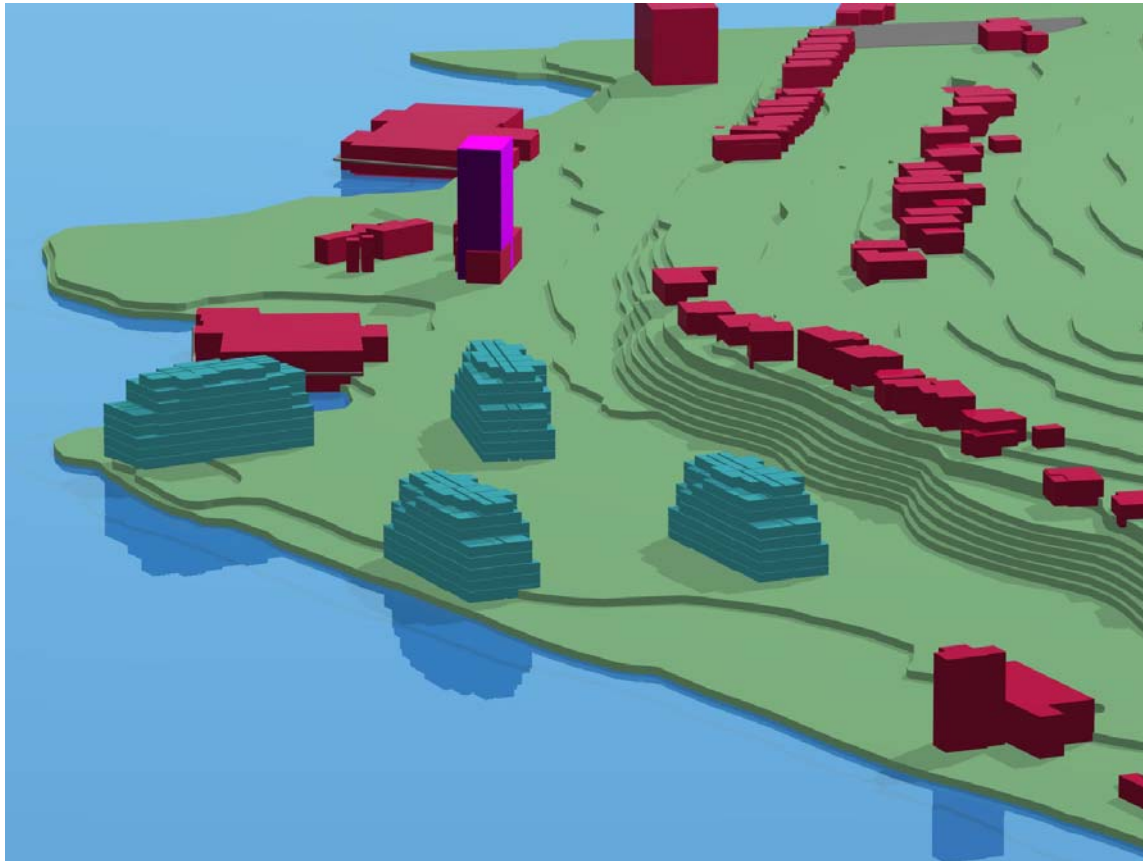
# Skyline Study - Possible Dome Massing

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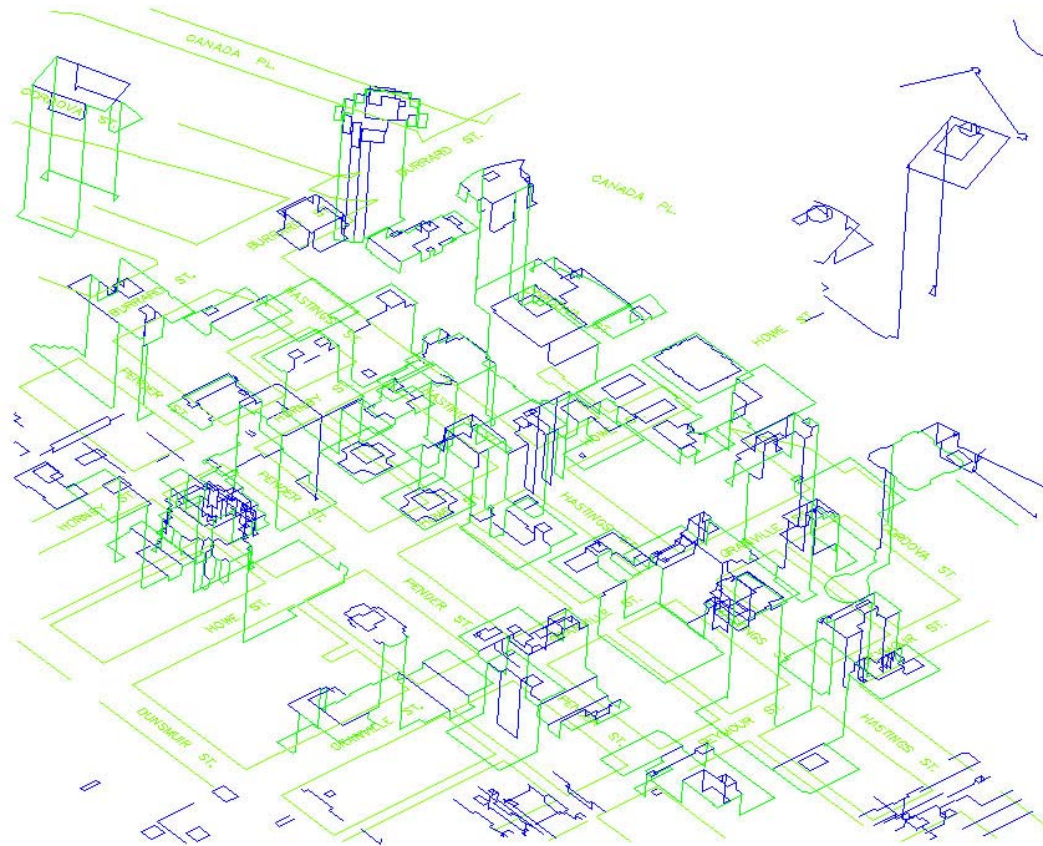


# Wall Street

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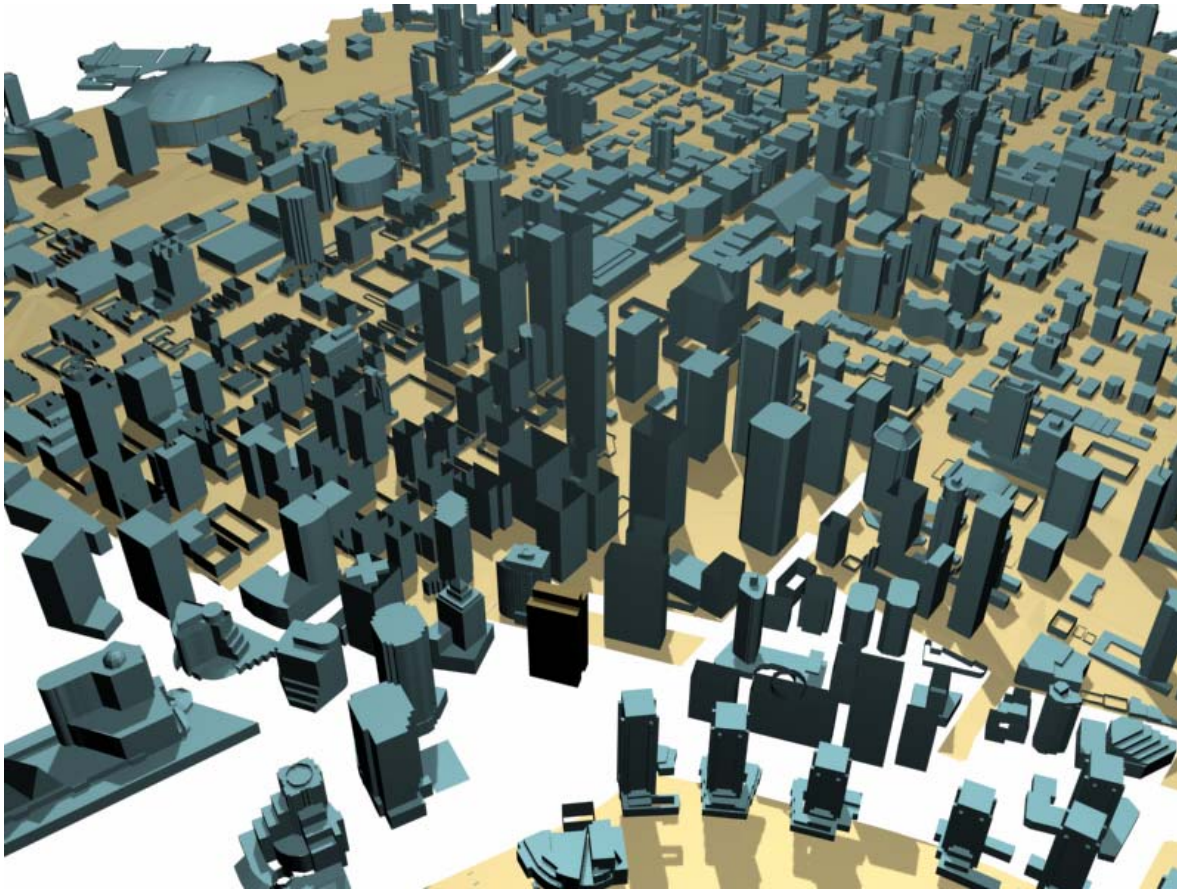


# Rooftops



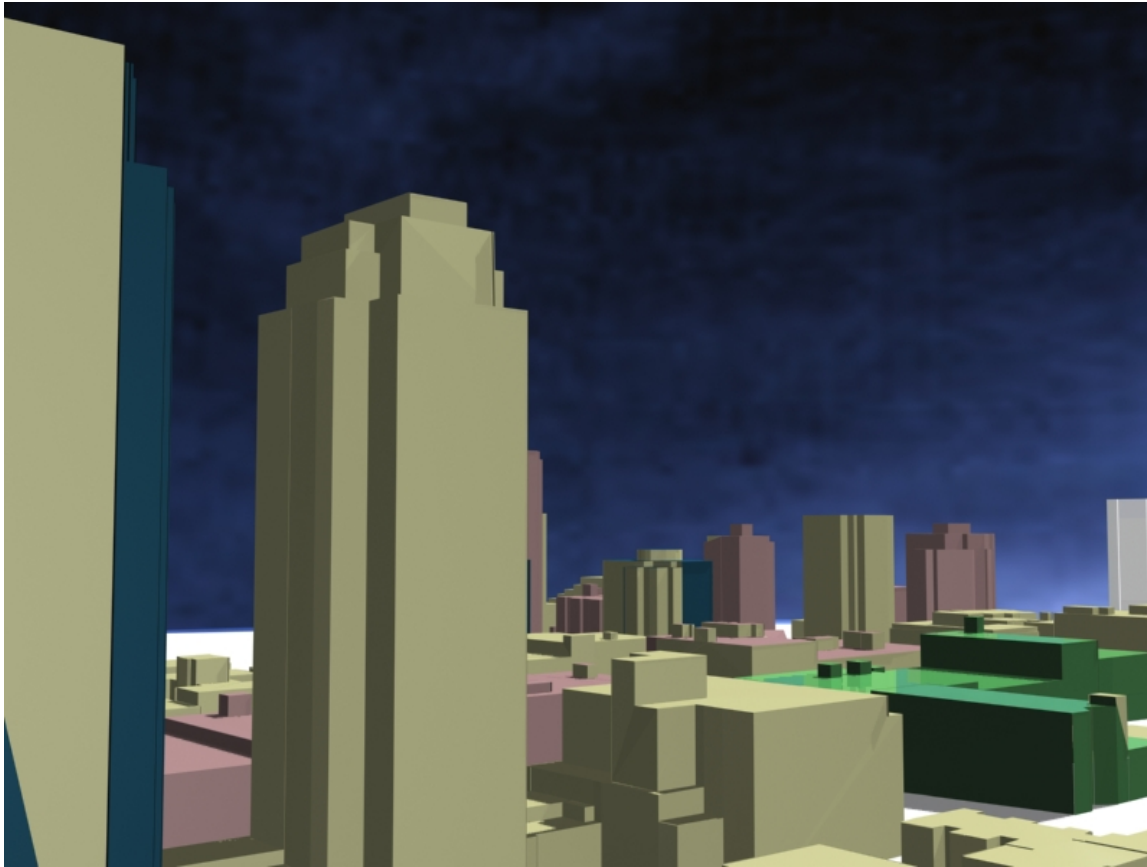
# 3D City Model

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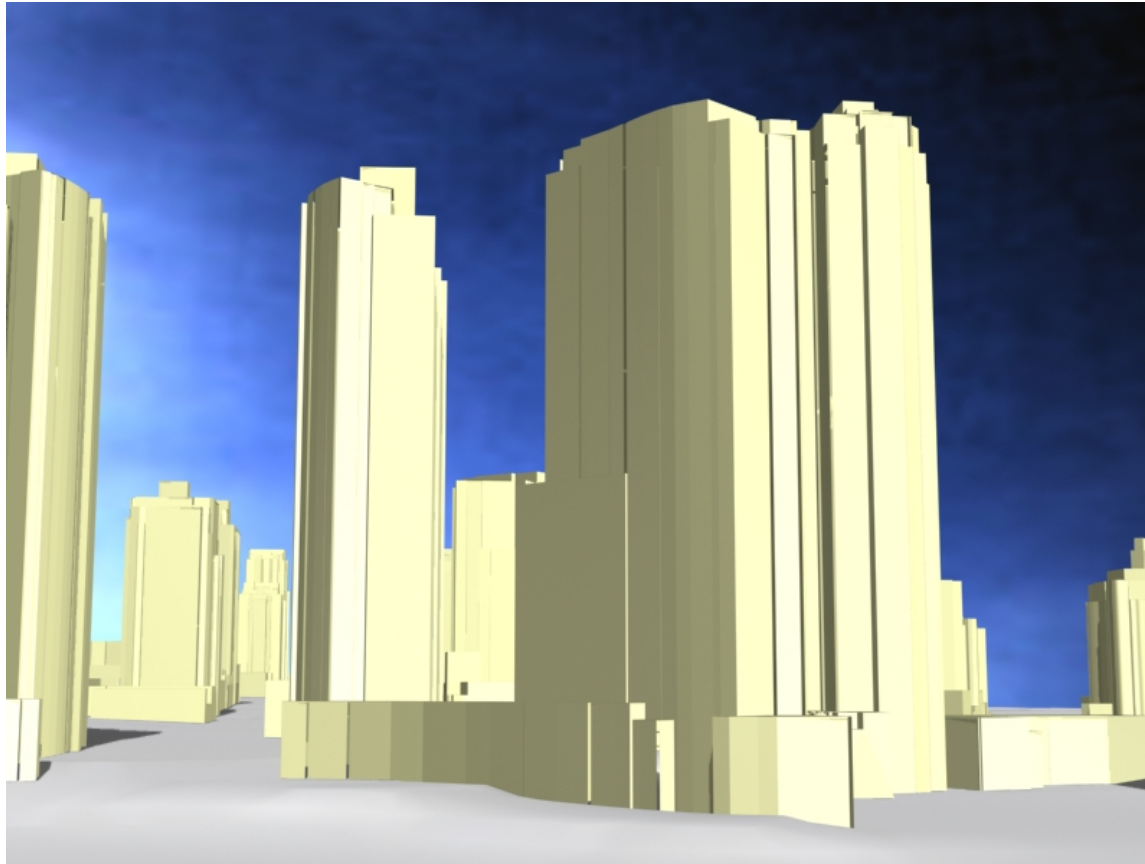
# City 3D Model

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# City 3D Model

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# Improvements

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- Visualizing with increasing accuracy
- New DEM, building grades
- Updating 3D model - 2004 ortho-photos
- Calculator for skyline needs
- Improved work-flow - public access to view calculator
- Data driven 3D analysis

