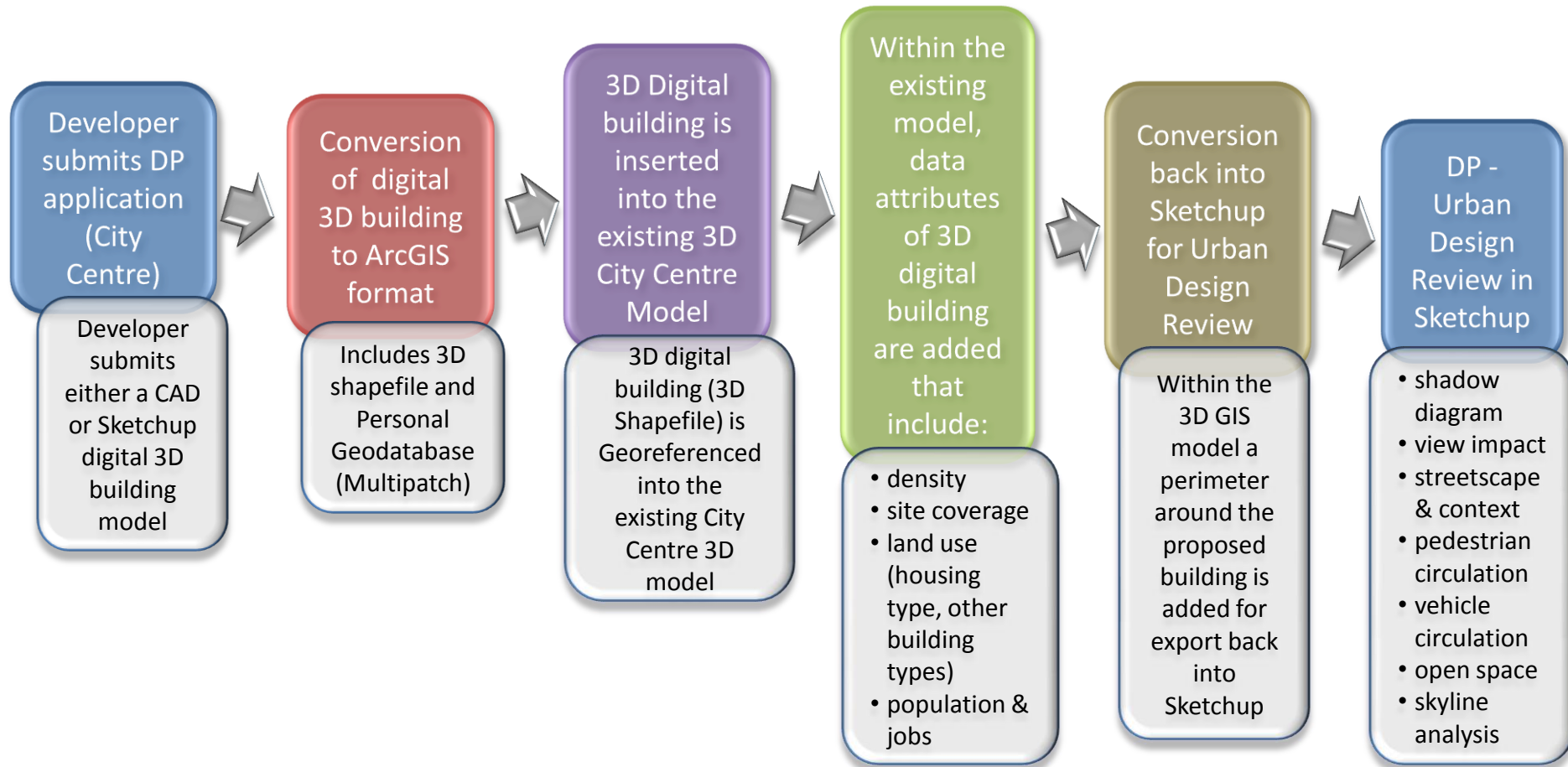


Surrey City Centre Digital 3D Building Model

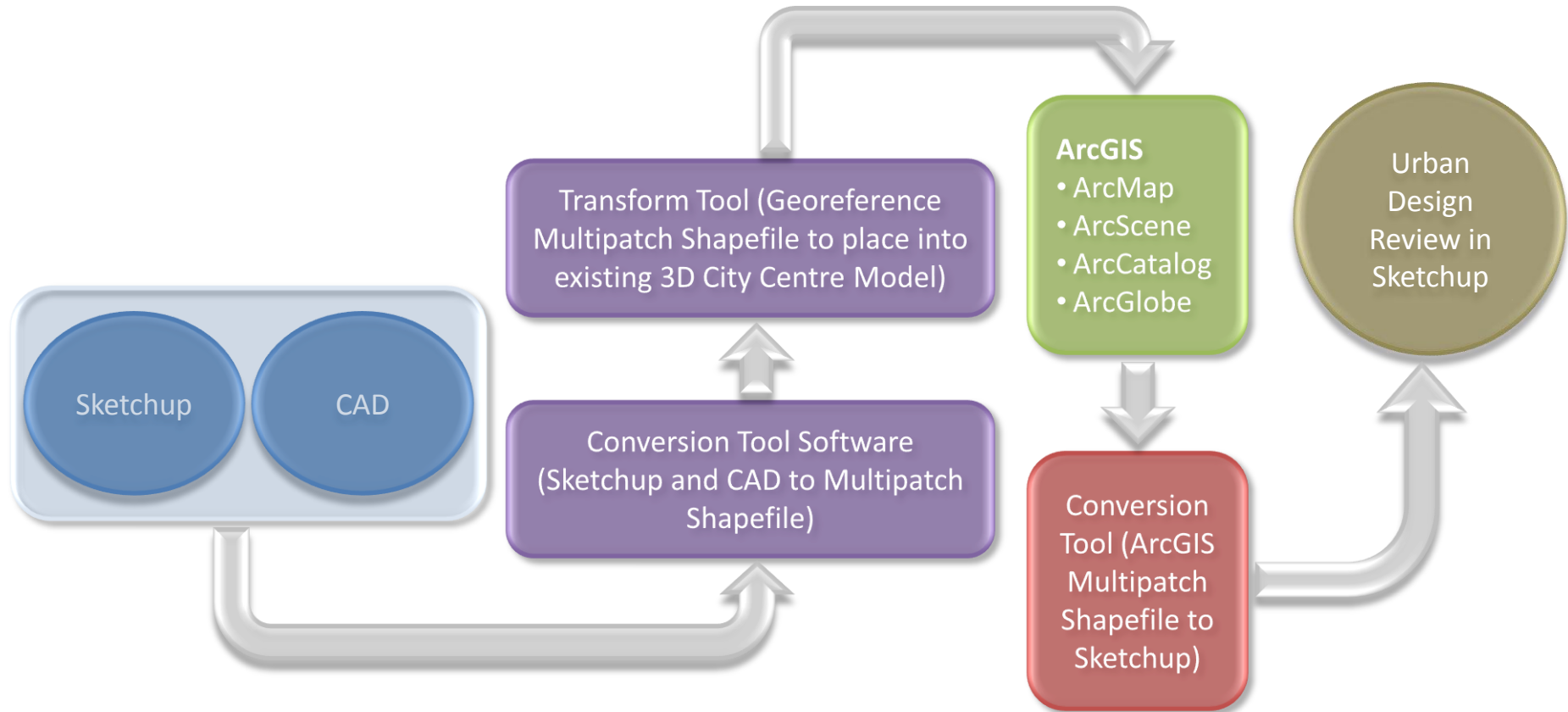


Process – Adding to the Existing City Centre Digital 3D Model



- The process of converting CAD/Sketchup digital 3D buildings into the existing ArcGIS 3D City Centre Model.

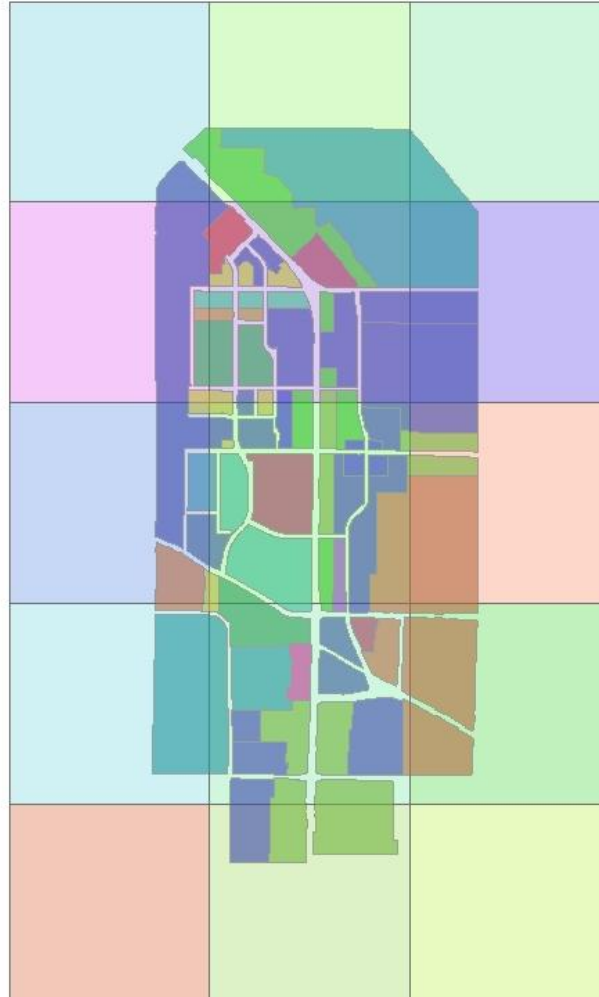
Process – Adding to the Existing City Centre Digital 3D Model



- Converting CAD/Sketchup digital 3D buildings into the existing ArcGIS 3D City Centre Model.

3D Model Components

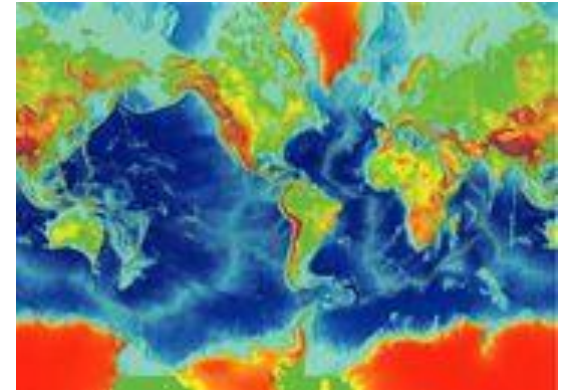
- The City Centre was divided into 15 quarter sections.
- Each quarter section was made up of a 10 cm resolution Ortho and Triangulated Irregular Network (TIN).
 - Each quarter section TIN contained over 1 million elevation points that were derived from Light Detection and Ranging (LIDAR).
 - The LIDAR information was used to create the TIN and DEM.



3D Model Components

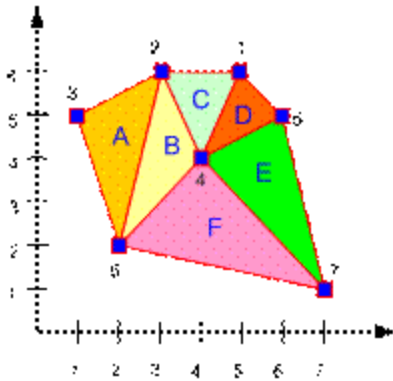
- LIDAR - is an optical remote sensing technology that measures properties of scattered light to find range and/or other information of a distant target.
- The prevalent method to determine distance to an object or surface is to use laser pulses.
- The range to an object is determined by measuring the time delay between transmission of a pulse and detection of the reflected signal.
- Data from LIDAR can recreate the surface of the earth.

Surface of the Earth



3D Model Components

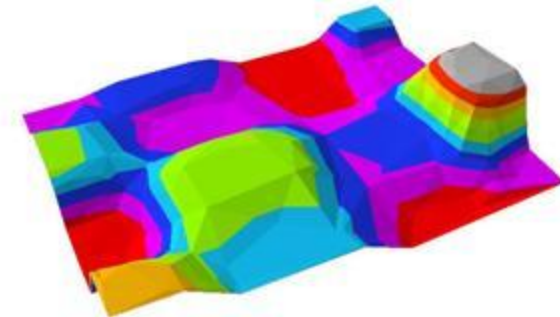
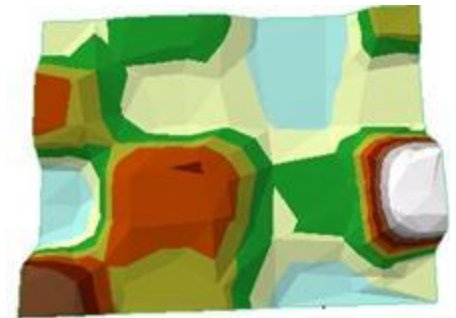
- TIN or Triangulated Irregular Network stored GIS data for 3D surface model.
 - As illustrated below, the basic unit is a triangle.



Node No	X	Y	Z
1	5	6	3
2	3	6	5
3	1	5	6
4	4	4	4
5	6	5	3
6	2	2	2
7	7	1	8

Triangle	Node Sequence	Neighbors
A	3,2,6	-,B,-
B	2,4,6	A,C,F
C	2,1,4	-,D,B
D	1,5,4	C,-,E
E	5,7,4	D,-,F
F	4,7,6	B,E,-

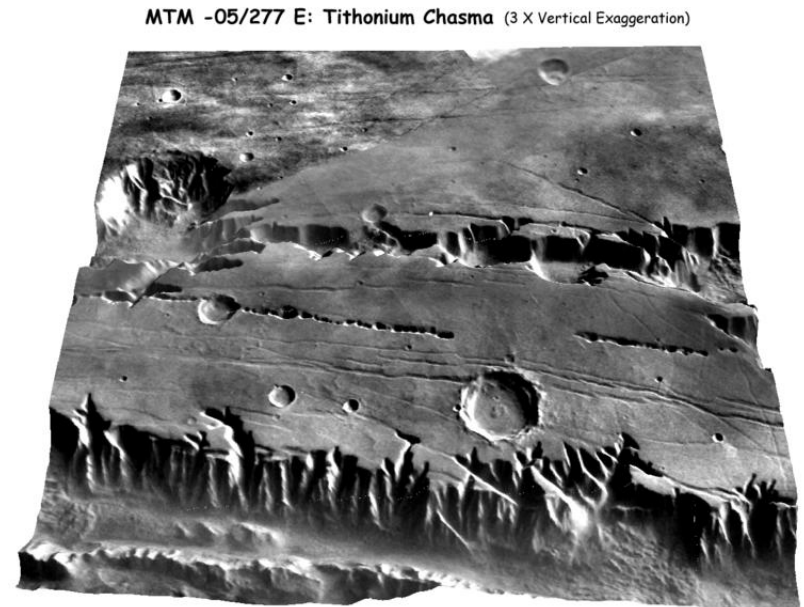
Examples of a TIN in 3D format.



Note: Because a triangle consists of three lines connecting three nodes, each triangle will have three neighbours (except those on the side or periphery). The triangle is represented by a sequence of three nodes. Each triangle may have other associated attributes such as population density, crime rate, etc. in another table.

3D Model Components

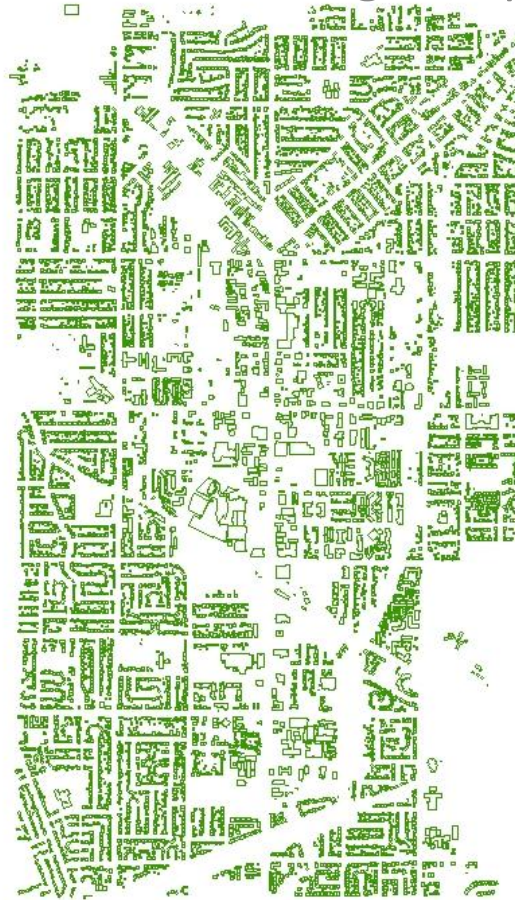
- Digital elevation model (DEM)
 - - is a digital representation of ground “surface topography” (earth’s surface) or terrain. It is also widely known as a **digital terrain model (DTM)**.



3D Model Components

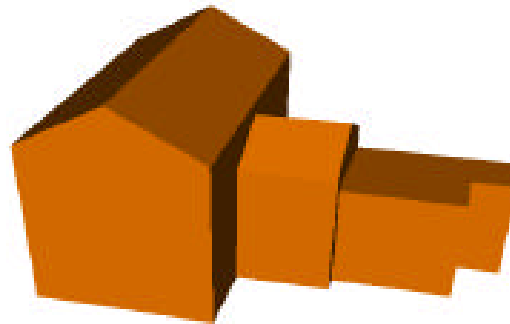
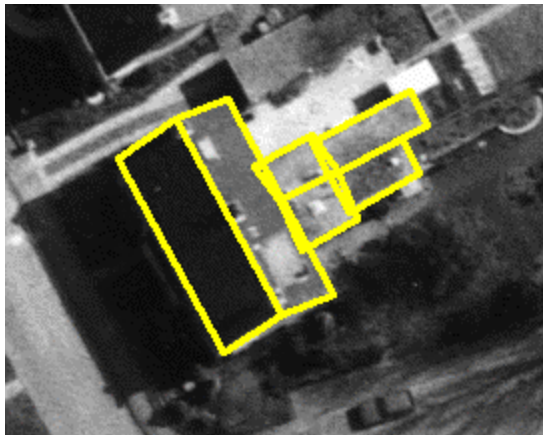
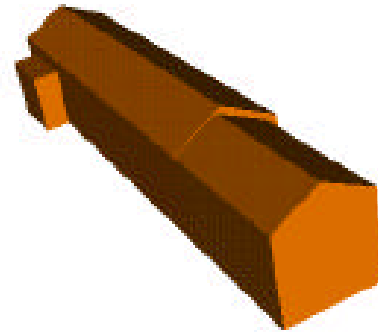
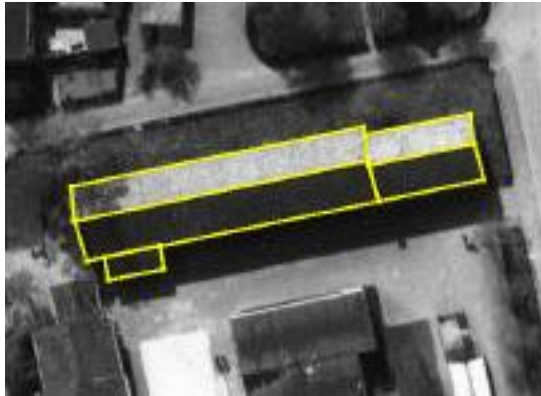
- 2D building foot print

City Centre Building Footprints



3D Model Components

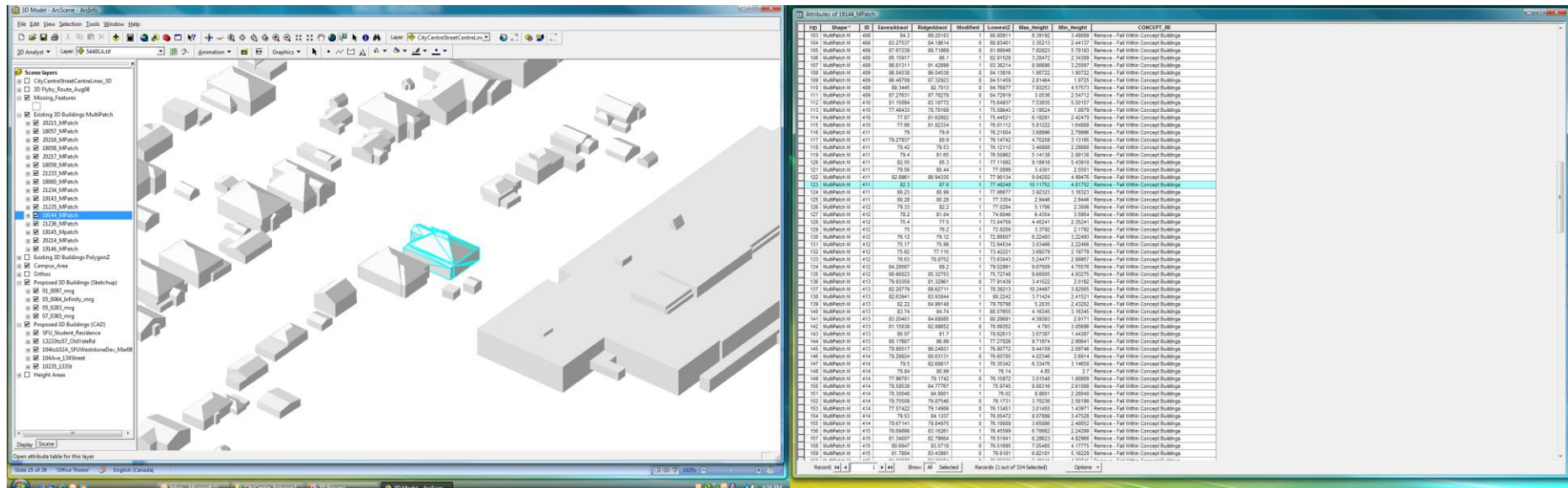
- 3D buildings



3D Model Components

- GIS 3D buildings MultiPatch files
 - Are less complex than PolygonZ files 3D building type files.
 - Multipatch 3D files contain simplified attribute information that include only one row of data in the attribute table that describe the building.
 - The advantage is related to memory storage. Multipatch files take up less memory than PolygonZ files.

Multipatch type GIS 3D files



The screenshot displays the ArcScene 3D environment with a city model. A table titled 'Attributes of 10144.Multipatch' is open, showing the following columns: FID, Shape*, ID, Elevation, RidgeElevation, Modified, LowestZ, Max_Height, Min_Height, and CONCEPT_RE. The table contains 100 rows of data, with the 101st row highlighted in blue.

FID	Shape*	ID	Elevation	RidgeElevation	Modified	LowestZ	Max_Height	Min_Height	CONCEPT_RE
101	Multipatch	408	84.1	89.20103	1	88.82911	8.39162	3.4999	Remove - Fall Within Concept Buildings
102	Multipatch	408	83.21507	84.18814	0	88.82461	3.35513	2.4412	Remove - Fall Within Concept Buildings
103	Multipatch	408	87.87229	89.71889	0	81.85948	7.82523	5.78193	Remove - Fall Within Concept Buildings
104	Multipatch	408	88.59127	88.1	0	82.81858	3.28472	2.3439	Remove - Fall Within Concept Buildings
107	Multipatch	408	86.61311	91.42389	1	82.36214	8.96986	3.2697	Remove - Fall Within Concept Buildings
108	Multipatch	408	86.64838	88.64538	0	84.13858	1.97252	1.9872	Remove - Fall Within Concept Buildings
109	Multipatch	408	88.48709	87.35923	0	84.51489	2.81484	1.9725	Remove - Fall Within Concept Buildings
110	Multipatch	408	89.3444	82.3913	0	84.76897	3.92263	4.1911	Remove - Fall Within Concept Buildings
111	Multipatch	408	87.27633	87.76278	0	84.72919	3.3536	2.5472	Remove - Fall Within Concept Buildings
112	Multipatch	410	81.5894	83.9772	1	78.44887	3.8388	1.8979	Remove - Fall Within Concept Buildings
113	Multipatch	410	77.48433	79.78168	1	78.58843	3.19524	1.9172	Remove - Fall Within Concept Buildings
114	Multipatch	410	77.87	81.82882	1	78.44521	6.16281	2.4279	Remove - Fall Within Concept Buildings
115	Multipatch	410	77.89	81.82834	1	78.81112	5.81222	1.6488	Remove - Fall Within Concept Buildings
116	Multipatch	411	79	79.9	1	78.21804	3.8996	2.7896	Remove - Fall Within Concept Buildings
117	Multipatch	411	79.29297	80.9	1	78.14242	4.7268	3.1338	Remove - Fall Within Concept Buildings
118	Multipatch	411	78.42	79.83	1	78.12112	3.48888	2.2868	Remove - Fall Within Concept Buildings
119	Multipatch	411	79.4	81.85	1	78.58883	3.14788	1.8112	Remove - Fall Within Concept Buildings
120	Multipatch	411	82.55	83.3	1	77.11882	8.18918	5.43918	Remove - Fall Within Concept Buildings
121	Multipatch	411	79.96	82.44	1	77.888	3.488	2.031	Remove - Fall Within Concept Buildings
122	Multipatch	411	82.5861	86.94205	1	77.90134	3.84202	4.69478	Remove - Fall Within Concept Buildings
123	Multipatch	411	83.2	87.8	1	77.48248	6.81782	4.87762	Remove - Fall Within Concept Buildings
124	Multipatch	411	80.29	80.99	1	77.86877	3.92323	3.1622	Remove - Fall Within Concept Buildings
125	Multipatch	411	80.28	80.29	1	77.3354	2.8446	2.8446	Remove - Fall Within Concept Buildings
126	Multipatch	412	78.33	82.2	1	77.6284	5.1786	3.3681	Remove - Fall Within Concept Buildings
127	Multipatch	412	78.2	81.84	1	74.6848	4.8344	1.9984	Remove - Fall Within Concept Buildings
128	Multipatch	412	78.4	77.5	1	77.82959	4.45811	3.2542	Remove - Fall Within Concept Buildings
129	Multipatch	412	78	78.2	1	77.82388	3.3782	1.7782	Remove - Fall Within Concept Buildings
130	Multipatch	412	78.18	78.12	0	81.89887	6.2248	5.2248	Remove - Fall Within Concept Buildings
131	Multipatch	412	78.17	79.98	1	78.94534	3.83486	2.2448	Remove - Fall Within Concept Buildings
132	Multipatch	412	78.82	77.118	1	77.42221	3.88279	2.1079	Remove - Fall Within Concept Buildings
133	Multipatch	412	78.63	79.292	1	78.83842	3.24471	2.8962	Remove - Fall Within Concept Buildings
134	Multipatch	412	84.28687	89.2	1	78.52891	8.8709	4.7878	Remove - Fall Within Concept Buildings
135	Multipatch	412	88.86223	88.32753	1	78.72148	8.8688	8.8278	Remove - Fall Within Concept Buildings
136	Multipatch	413	79.83356	81.22961	0	77.91439	3.41522	2.9192	Remove - Fall Within Concept Buildings
137	Multipatch	413	88.86223	88.82171	1	78.38281	6.24487	5.2618	Remove - Fall Within Concept Buildings
138	Multipatch	413	82.0941	83.8844	1	80.2242	3.7424	2.4151	Remove - Fall Within Concept Buildings
139	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
140	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
141	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
142	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
143	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
144	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
145	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
146	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
147	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
148	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
149	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
150	Multipatch	413	80.29288	80.29288	0	80.29288	3.2051	2.4228	Remove - Fall Within Concept Buildings
151	Multipatch	414	79.86238	84.77887	1	78.7948	8.88316	2.8188	Remove - Fall Within Concept Buildings
152	Multipatch	414	79.86238	84.77887	1	78.7948	8.88316	2.8188	Remove - Fall Within Concept Buildings
153	Multipatch	414	79.86238	84.77887	1	78.7948	8.88316	2.8188	Remove - Fall Within Concept Buildings
154	Multipatch	414	79.86238	84.77887	1	78.7948	8.88316	2.8188	Remove - Fall Within Concept Buildings
155	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
156	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
157	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
158	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
159	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
160	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
161	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
162	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
163	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
164	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
165	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
166	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
167	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
168	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
169	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
170	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
171	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
172	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
173	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
174	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
175	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
176	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
177	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
178	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
179	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
180	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
181	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
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184	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
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186	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
187	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
188	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
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191	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
192	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
193	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
194	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
195	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
196	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
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198	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
199	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings
200	Multipatch	414	77.87422	79.48986	0	78.1311	3.79236	2.8188	Remove - Fall Within Concept Buildings

3D Model Components

- GIS 3D buildings PolygonZ files
 - Are more complex than Multipatch 3D building type files.
 - PolygonZ files contain more detailed attribute information regarding all sizes of the building.
 - The advantage is related to it's complexity. PolygonZ files can store more attribute information for each building that includes building facade (exterior of a building) and other land use information (illustrated on the right).



PolygonZ type GIS 3D files

The screenshot displays the ArcScene 10.4.1 interface. On the left, a 3D model of a city block is shown with various buildings rendered in a light tan color. A specific building is highlighted with a blue wireframe. The 'Scene Layers' panel on the left lists several layers, including 'Building 3D Buildings PolygonZ'. On the right, the 'Attributes of 13444 Poly' table is visible, showing detailed attributes for the selected polygon.

ID	Shape	Number	ID	Modified	EaveAbsciss	RidgeAbsciss	EaveZ	Ridge	LowestZ	HeightZ	FaceType	FaceID	RoofType	Texture	Normal X	Normal Y	Normal Z	
13443	Polygon 2D	1102	411	1	82.0961	86.94335	0	0	77.99134	82.9	1	0	0	texture_wall.jpg	-0.0304	-0.9999	0	
13444	Polygon 2D	1101	411	1	82.0961	86.94335	0	0	77.99134	82.9	1	0	0	texture_wall.jpg	1	0.003	-0.00081	
13445	Polygon 2D	1102	411	1	82.0961	86.94335	0	0	77.99134	82.9	1	0	0	texture_wall.jpg	-0.0304	-0.9999	0	
13446	Polygon 2D	1103	411	1	82.0961	86.94335	0	0	77.99134	82.9	1	10	0	0	texture_wall.jpg	0.0044	0.0044	0
13447	Polygon 2D	1104	411	1	82.0961	86.94335	0.86676	1.84202	82.0861	86.94335	2	0	4	texture_roof.jpg	-0.03249	-0.40059	0.98763	
13448	Polygon 2D	1105	411	1	82.0961	86.94335	0.86676	1.84202	82.0861	86.94335	2	7	4	texture_roof.jpg	0.03249	-0.40059	0.98763	
13449	Polygon 2D	1106	411	1	82.0961	86.94335	0	0	77.99134	82.0961	1	11	0	0	texture_wall.jpg	-0.99999	-0.00441	0
13450	Polygon 2D	1107	411	1	82.0961	86.94335	0	0	77.99134	82.0961	1	02	0	0	texture_wall.jpg	0.00009	0.00041	0
13451	Polygon 2D	1108	411	1	82.0961	86.94335	0	0	77.99134	77.99134	0	0	0	0	0	0	0	-1
13452	Polygon 2D	1109	411	1	82.3	87.6	0	0	77.45248	82.30245	1	0	0	0	texture_wall.jpg	0.99991	-0.11338	0
13453	Polygon 2D	1110	411	1	82.3	87.6	0	0	77.45248	82.30245	1	1	0	0	texture_wall.jpg	-0.11338	0.99991	0
13454	Polygon 2D	1111	411	1	82.3	87.6	0	0	77.45248	82.30245	1	2	0	0	texture_wall.jpg	-0.99991	-0.11338	0
13455	Polygon 2D	1112	411	1	82.3	87.6	0	0	77.45248	82.30245	1	3	0	0	texture_wall.jpg	-0.99991	-0.11338	0
13456	Polygon 2D	1113	411	1	82.3	87.6	0	0	77.45248	82.30245	1	4	0	0	texture_wall.jpg	-0.11338	-0.99991	0
13457	Polygon 2D	1114	411	1	82.3	87.6	0	0	77.45248	82.30245	1	5	0	0	texture_wall.jpg	-0.11338	-0.99991	0
13458	Polygon 2D	1115	411	1	82.3	87.6	7.1567	14.41889	84.63918	85.9147	2	2	2	texture_roof.jpg	-0.41397	-0.00001	0.99991	
13459	Polygon 2D	1116	411	1	82.3	87.6	4.81997	4.81997	82.3	82.30245	2	1	2	texture_roof.jpg	0.03009	-0.00004	1	
13460	Polygon 2D	1117	411	1	82.3	87.6	4.81997	15.1175	82.30245	87.6	2	4	4	texture_roof.jpg	0.81189	0.00819	0.99082	
13461	Polygon 2D	1118	411	1	82.3	87.6	4.81997	15.1175	82.30245	87.6	2	5	4	texture_roof.jpg	-0.1189	-0.00819	0.99082	
13462	Polygon 2D	1119	411	1	82.3	87.6	0	0	77.45248	82.30245	1	4	0	0	texture_wall.jpg	-0.11338	0.99991	0
13463	Polygon 2D	1120	411	1	82.3	87.6	0	0	77.45248	82.30245	1	0	0	0	texture_wall.jpg	-0.11338	-0.99991	0
13464	Polygon 2D	1121	411	1	82.3	87.6	0	0	77.45248	82.30245	1	6	0	0	texture_wall.jpg	-0.11338	-0.99991	0
13465	Polygon 2D	1122	411	1	82.3	87.6	0	0	77.45248	82.30245	1	7	0	0	texture_wall.jpg	0.11344	-0.99991	0
13466	Polygon 2D	1123	411	1	82.3	87.6	0	0	77.45248	82.30245	1	8	0	0	texture_wall.jpg	-0.11344	-0.99991	0
13467	Polygon 2D	1124	411	1	82.3	87.6	0	0	77.45248	82.3	1	9	0	0	texture_wall.jpg	-0.99991	-0.11344	0
13468	Polygon 2D	1125	411	1	82.3	87.6	0	0	77.45248	85.9147	1	10	0	0	texture_wall.jpg	-0.11338	-0.99991	0
13469	Polygon 2D	1126	411	1	82.3	87.6	0	0	77.45248	82.3	1	11	0	0	texture_wall.jpg	0.99991	-0.11338	0
13470	Polygon 2D	1127	411	1	82.3	87.6	0	0	77.45248	82.30245	1	02	0	0	texture_wall.jpg	-0.11338	0.99991	0
13471	Polygon 2D	1128	411	1	82.3	87.6	0	0	77.45248	82.30245	1	10	0	0	texture_wall.jpg	0.11338	-0.99991	0
13472	Polygon 2D	1129	411	1	82.3	87.6	4.81997	15.1175	82.30245	87.6	2	4	4	texture_roof.jpg	-0.01708	-0.42033	0.98414	
13473	Polygon 2D	1130	411	1	82.3	87.6	0	0	77.45248	84.63918	1	14	0	0	texture_wall.jpg	-0.11338	0	0
13474	Polygon 2D	1131	411	1	82.3	87.6	0	0	77.45248	87.6	2	0	0	0	texture_wall.jpg	-0.99991	-0.11338	0
13475	Polygon 2D	1132	411	1	82.3	87.6	4.81997	15.1175	82.30245	87.6	2	4	4	texture_roof.jpg	0.01708	-0.42033	0.98414	
13476	Polygon 2D	1133	411	1	82.3	87.6	0	0	77.45248	77.45248	0	0	0	0	0	0	0	0
13477	Polygon 2D	1134	411	1	82.2	89.9	3.16323	3.02023	80.23	89.99	2	1	2	texture_roof.jpg	-0.1121	-0.12181	0.98973	
13478	Polygon 2D	1135	411	1	82.2	89.9	3.16323	3.02023	80.23	89.99	2	1	2	texture_roof.jpg	0.1121	0.12181	0.98973	
13479	Polygon 2D	1136	411	1	82.2	89.9	0	0	77.08077	80.23	1	1	0	0	texture_wall.jpg	-0.99794	-0.00001	0
13480	Polygon 2D	1137	411	1	82.2	89.9	0	0	77.08077	80.23	1	1	0	0	texture_wall.jpg	0.99794	0.00001	0
13481	Polygon 2D	1138	411	1	82.2	89.9	0	0	77.08077	80.23	1	1	0	0	texture_wall.jpg	-0.00001	-0.99794	0
13482	Polygon 2D	1139	411	1	82.2	89.9	0	0	77.08077	80.99	1	3	0	0	texture_wall.jpg	0.00001	-0.99276	0
13483	Polygon 2D	1140	411	1	82.2	89.9	0	0	77.08077	80.99	1	0	0	0	texture_wall.jpg	0	0	-1
13484	Polygon 2D	1141	411	1	82.2	89.9	0	0	77.08077	80.28	2	0	0	0	texture_roof.jpg	0	0	-1
13485	Polygon 2D	1142	411	1	82.28	89.28	0	0	77.3554	89.28	1	0	0	0	texture_wall.jpg	-0.99649	-0.00376	0
13486	Polygon 2D	1143	411	1	82.28	89.28	0	0	77.3554	89.28	1	1	0	0	texture_wall.jpg	-0.00376	-0.99649	0
13487	Polygon 2D	1144	411	1	82.28	89.28	0	0	77.3554	89.28	1	2	0	0	texture_wall.jpg	0.99649	0.00376	0
13488	Polygon 2D	1145	411	1	82.28	89.28	0	0	77.3554	89.28	1	3	0	0	texture_wall.jpg	-0.00376	-0.99649	0
13489	Polygon 2D	1146	411	1	82.28	89.28	0	0	77.3554	77.3554	0	0	0	0	0	0	0	-1
13490	Polygon 2D	1147	412	1	79.33	82.2	2.8466	5.7966	85.7	82.2	6	4	4	texture_roof.jpg	0.54241	0.54241	0.98423	
13491	Polygon 2D	1148	412	1	79.33	82.2	2.8466	5.7966	85.7	82.2	2	1	3	texture_roof.jpg	-0.17622	0.02409	0.91051	
13492	Polygon 2D	1149	412	1	79.33	82.2	2.8466	5.7966	85.7	82.2	2	1	3	texture_roof.jpg	-0.17421	0.3781	0.94243	
13493	Polygon 2D	1150	412	1	79.33	82.2	2.8466	5.7966	85.7	82.2	2	1	3	texture_roof.jpg	-0.17622	-0.02409	0.91051	
13494	Polygon 2D	1151	412	1	79.33	82.2	0	0	77.0254	80.28	1	0	0	0	texture_wall.jpg	-0.9991	-0.04249	0
13495	Polygon 2D	1152	412	1	79.33	82.2	1.03893	1.03893	80.0604	80.0604	2	4	1	0	texture_roof.jpg	0	0	1
13496	Polygon 2D	1153	412	1	79.33	82.2	0	0	77.0254	80.0604	1	1	0	0	texture_wall.jpg	0.04249	0.99991	0
13497	Polygon 2D	1154	412	1	79.33	82.2	0	0	77.0254	80.0604	1	2	0	0	texture_wall.jpg	-0.9991	-0.04249	0
13498	Polygon 2D	1155	412	1	79.33	82.2	0	0	77.0254	80.0604	1	3	0	0	texture_wall.jpg	0.9991	-0.04249	0
13499	Polygon 2D	1156	412	1	79.33	82.2	2.3062	2.3062	79.33	79.33	0	0	0	0	texture_roof.jpg	-0.00001	-0.00001	1

3D Model Components

- Developers 3D submissions for the Development Application process

Current Major Projects in Surrey City Centre

■ CURRENT MAJOR PROJECTS
■ BUSINESS IMPROVEMENT AREA
■ CITY CENTRE
■ SKYTRAIN

2008

CITY OF SURREY - PLANNING AND DEVELOPMENT DEPARTMENT

LIST	FOLDER	DESCRIPTION OF PROJECT	July 26, 2006
1	06-0166-00	10 STACKED TOWNHOUSE UNITS	
2	01-0087-00	ONE, 4 STOREY APT. WITH 20 UNITS AND ONE 26-STOREY APT. TOWER WITH 147 UNITS	
3	02-0258-00	61, THREE-STOREY TOWNHOUSES	
4	03-0071-00	FOUR-STOREY MIXED USE BUILDING WITH 111 UNITS	
5	03-0246-00	405-BAY CHURCH	
6	03-0277-00	1, 21 STOREY AND 2, 19 STOREY HIGH-RISE BUILDINGS	
7	03-0210-00	4 STOREY, 62-UNIT APARTMENT BUILDING	
8	03-0472-00	16, 3 STOREY TOWNHOUSES	
9	06-0033-00	112 UNIT 4 STOREY APARTMENT BUILDING	
10	06-0064-00	PHASE I OF MIXED-USE DEVELOPMENT ONE, 36 STOREY RESIDENTIAL TOWERS(45 UNITS) AND TWO ONE STOREY COMM. BUILDING CONTAINING 850m ²	
11	06-0208-00	107 UNITS, 4 STOREY APARTMENT BUILDING	
12	06-0283-00	FOUR 4-STOREY BUILDINGS CONTAINING 460 RESIDENTIAL UNITS AND 1,830m ² OF COMMERCIAL AREA	
13	06-0223-00	TWO, 36 STOREY APT. BLDG (898 UNITS, 1526 M ² COMM SPACE), AND THREE STOREY 5,225m ² COMMERCIAL BLDG.	
14	06-0383-00	85 UNIT, 3-STOREY STACKED TOWNHOUSES	
15	06-0386-00	CARE FACILITY CONTAINING 20 HOUSPACE BEDS, 20 SUBACUTE CARE BEDS AND 187 MULTI-LEVEL CARE BEDS	
16	06-0401-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 63 UNITS	
17	06-0028-00	FOUR STOREY APARTMENT BUILDINGS CONTAINING 71 UNITS	
18	06-0147-00	ONE, 34-STOREY AND ONE 39-STOREY HIGH-RISE APARTMENT BUILDING CONTAINING 574 UNITS	
19	06-0184-00	ONE, 21-STOREY HIGH-RISE APARTMENT BUILDING CONTAINING 180 UNITS	
20	06-0178-00	78 STACKED TOWNHOUSE UNITS	
21	06-0186-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 18 ROW HOUSES	
22	06-0208-00	ONE 40-STOREY AND ONE, 36 STOREY HIGH-RISE APARTMENT BUILDING CONTAINING 811 APT. UNITS AND 19 TOWNHOUSE UNITS	
23	06-0236-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 75 UNITS	
24	06-0264-00	ONE, 21-STOREY (196 UNITS) AND ONE, 25 STOREY APT. TOWER WITH 256 UNITS AND 402m ² OF COMM SPACE	
25	06-0253-00	ONE, 33 STOREY APT. BLDG. CONTAINING 235 UNITS AND 18 GROUND ORIENTED TOWNHOUSES	
26	06-0251-00	FOUR-STOREY APT. BLDG. CONTAINING 135 UNITS	
27	06-0306-00	FOUR-STOREY APT. BLDG. CONTAINING 40 UNITS	
28	06-0389-00	FOUR-STOREY APT. BLDG. CONTAINING 40 UNITS	
29	06-0389-00	SIXTEEN, 3 STOREY TOWNHOUSES	
30	06-0418-00	ONE 11-STOREY AND ONE 21 STOREY CONTAINING 180 UNITS (545 STUDENTS), FOR 5000	
31	06-0420-00	ONE 4-STOREY AND ONE 38-STOREY BLDG CONTAINING 63 UNITS	
32	07-0034-00	FOUR-STOREY APARTMENT BUILDING (108 UNITS)	
33	07-0084-00	TWO 4-STOREY APARTMENT BUILDING (131 UNITS)	
34	07-0120-00	SECOND FLOOR ADDITION TO COMMERCIAL BUILDING	
35	07-0198-00	FOUR-STOREY APT. BLDG. CONTAINING 64 UNITS	
36	07-0264-00	TWO-STOREY COMMERCIAL BLDG. CONTAINING 452m ²	
37	07-0364-00	FOUR-STOREY APARTMENT BLDG. CONTAINING 91 UNITS	
38	07-0365-00	ONE-STOREY BOTTLE NECK RETURN FACILITY	
39	07-0386-00	FOUR-STOREY APARTMENT BLDG. CONTAINING 91 UNITS	
40	07-0376-00	FOUR-STOREY APT. BLDG. CONTAINING 50 UNITS	
41	07-0382-00	2-STOREY COMMERCIAL BLDG. CONTAINING 332m ²	
42	07-0383-00	27-STOREY APARTMENT BLDG. CONTAINING 186 UNITS	
43	08-0002-00	FOUR-STOREY CARE FACILITY CONTAINING 144 BEDS	
44	08-0008-00	4 TOWNHOUSES	
45	08-0001-00	FOUR-STOREY APT. BLDG (71 UNITS)	
46	08-0078-00	ONE STOREY RETAIL/OFFICE (1400m ²)	
47	08-0080-00	THREE HIGH-RISE RES. APT. TOWERS (1100 UNITS)	
48	08-0112-00	THREE OFFICE BLDG.(7500m ²) TWO HIGH-RISE APT. TOWERS (460 UNITS)	
49	08-0131-00	FOUR-STOREY APARTMENT BLDG. CONTAINING 57 UNITS.	
50	08-0180-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 105 UNITS.	
51	08-0184-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 94 UNITS.	
52	08-0287-00	29-STOREY APARTMENT BUILDING CONTAINING 362 UNITS. THIS IS PHASE I OF THE HOLLAND POINTE PROJECT	
53	08-0211-00	FOUR-STOREY APARTMENT BUILDING CONTAINING 82 UNITS.	

Surrey's Existing City Centre Digital 3D Model



Examples of New Buildings (SketchUp)



- Application 01-0097-00 in SketchUp as submitted by the developer.
- The SketchUp file includes the existing tower to the east.

Examples of New Buildings

Before

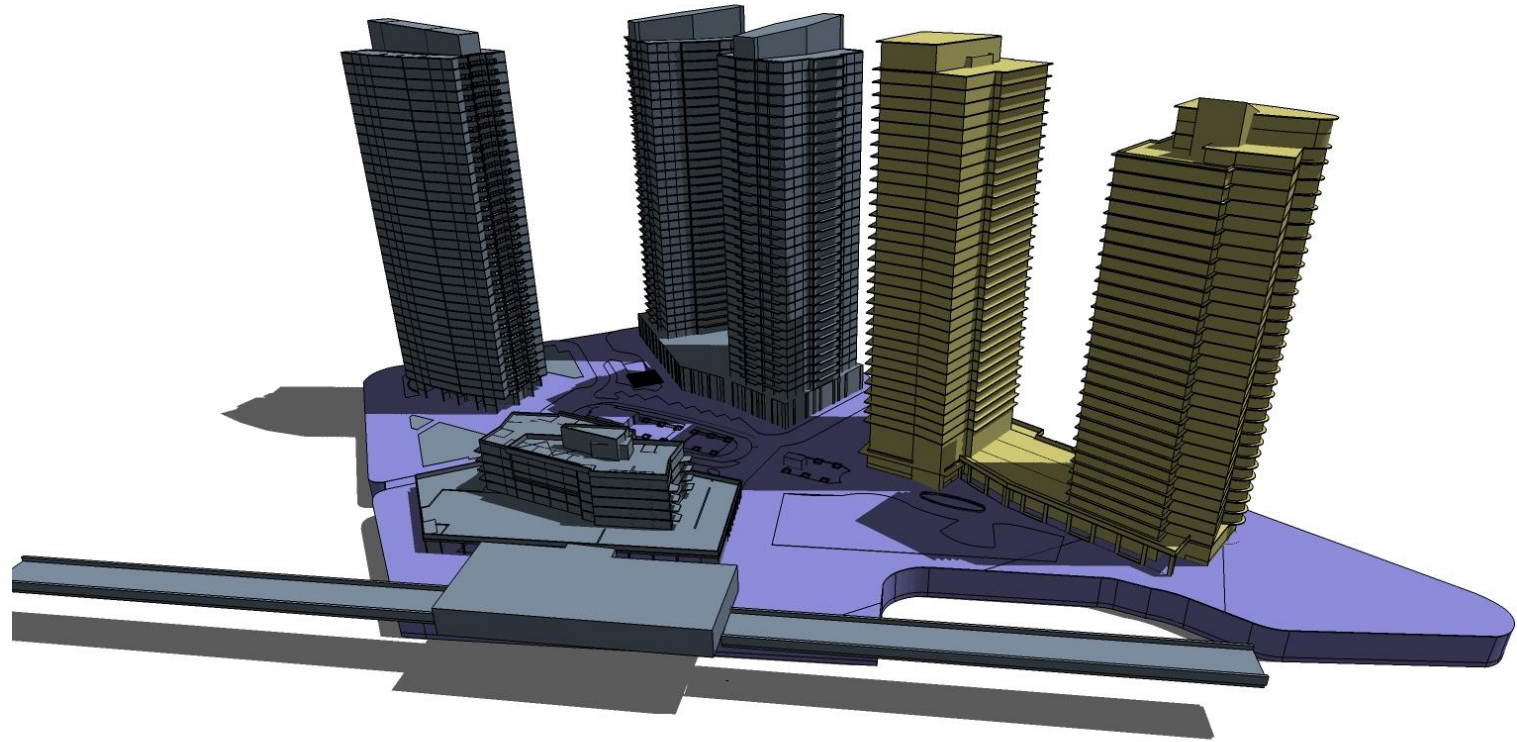


After



- Application 01-0097-00.
- To construct a 4-storey, 20-unit apartment building on the north portion and a 27-storey, 147-unit apartment tower on the southern portion of the site.

Examples of New Buildings (SketchUp)

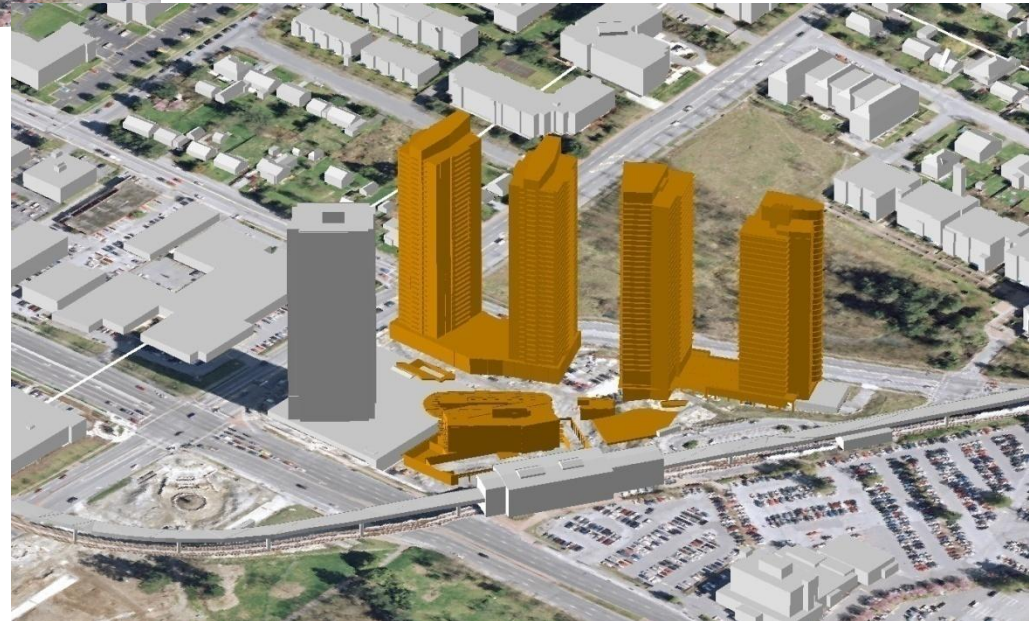


- Application 05-0323-00 in SketchUp as submitted by the developer.

Examples of New Buildings



After



- Application 05-0323-00.
- Two, 36 storey apartment buildings (698 units, 1525 sqm of commercial space) and a three storey 5,225 sqm commercial buildings.

Examples of New Buildings (SketchUp)



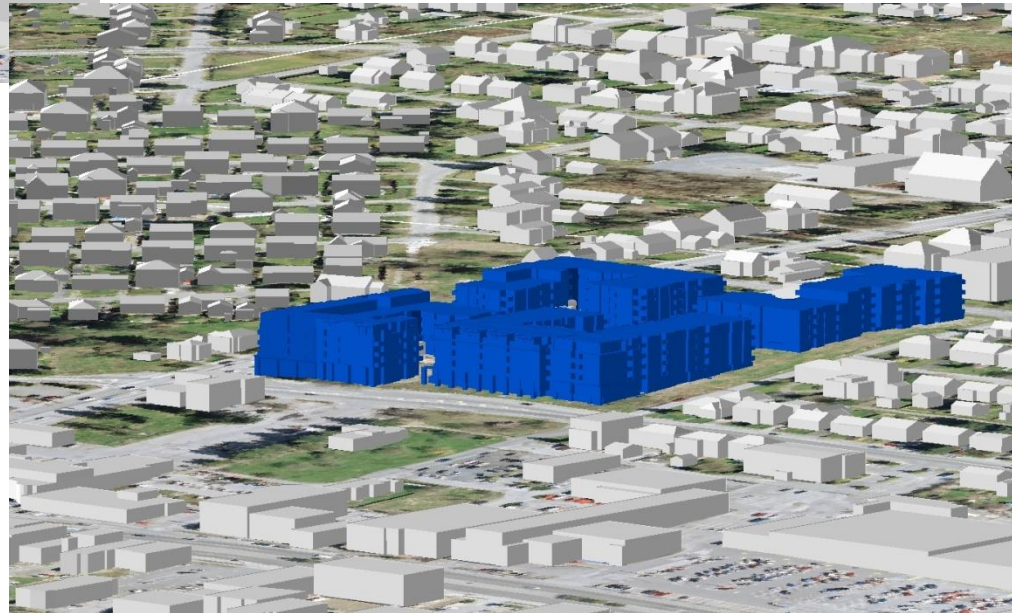
- Application 05-0283-00 in SketchUp as submitted by the developer.

Examples of New Buildings

Before



After



- Application 05-0283-00.
- Four 4-storey buildings containing 460 residential units and 1,820 sqm of commercial area.

Examples of New Buildings (SketchUp)



- Application 05-0365-00 in SketchUp as submitted by the developer.

Examples of New Buildings

Before



After



- Application 07-0365-00.
- A 4-storey apartment building containing 91 units.

Examples of New Buildings

Before



After



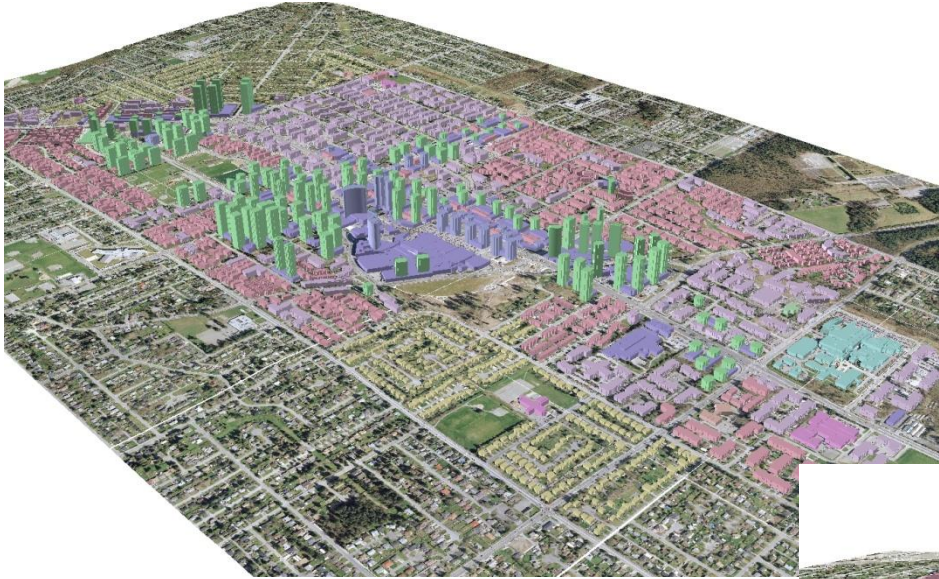
- Includes
 - Application 03-0277-00 – One 21 storey and 2, 18 storey high-rise buildings.
 - Application 08-0160-00 – A 4-storey apartment building containing 105 units.
 - Application 06-0164-00 – One, 21-storey apartment building containing 56 units.
 - Proposed SFU student residences.

The Next Task

- Insert all new proposed development into the City Centre 3D model.
 - As Development permit applications are submitted, their 3D digital buildings will be added to the City Centre 3d Model to be used for analysis by
 - Area Planning
 - Design Review Panel

Future Concept of City Centre

City Centre (North looking South) Concept Buildings



City Centre (South looking North) Concept Buildings



Future Concept of City Centre

City Centre (South looking North along King George Hwy) Concept Buildings



City Centre (East looking West) Concept Buildings



Future Concept of City Centre

City Centre Concept Buildings
With Height Areas



City Centre (East looking
West) Concept Buildings
and Height Areas



The End