Daylight Case Study
Las Vegas, Nevada
Justin Avila
Siteplan

• 1° east of solar north

• Adjacent properties
  – East: one-story residential duplex
  – Northeast: residential street
  – North: residential backyard
  – Northwest/West: small asphalt parking lot
  – South: Flamingo Road
Siteplan
Usage

• Architectural Design Firm: Jones & Greenwold

• Common Tasks:
  – Computer based work
  – Reading of large prints
  – Drawing
  – Formal to informal meetings
Structure

• **Construction Material:**
  – Steel framing with wood stud infill

• **Exterior**
  – Painted stucco system

• **Interior**
  – Painted gypsum board filled in-between exposed structural steel

• **Glazing**
  – Slight tinting agent
Dimensions

• Footprint of building:
  – 60’-6” wide x 20’-4” deep (1,230 sq ft)

• Lofted Space:
  – 60’-6” wide x 12’-9” deep (770 sq ft)

• Workspace:
  – 30’-0” wide both upstairs and downstairs

• Overall Building Height
  – 25’-0” to top of parapet

• Interior Heights
  – Bottom of deck=10’-10”
  – Top of second floor=11’-9”
  – Bottom of ceiling deck= 21’-9”
Floorplan
Glazing

- Window of North façade:
  - 28’-4” long x 11’-10” tall

- Frosted Window above:
  - 9’-10” long x 6’-0” tall
Lighting

• North orientation:
  – At Desk Sitting 4’9” = 14°
  – Next to Window at 6’ = 37°
  – Daylight is provided by ambient sky dome lighting
  – Actual sky view is available
Existing Sky View
Existing Sky Dome Lighting
Upstairs Daylight

9 am

1 pm

4 pm
Lighting

• Artificial Lighting
  – Suspended 2’x4’ flourescent light fixtures with opaque covers

• Task Lighting
  – Use of desk lamps

• Path Lighting
  – Above the staircase
Artificial Lighting
Recent Lighting Strategies

- Downstairs- private offices moved
- New Desks- 30” height
- Rear Wall was painted accent color light blue
- Main Workplace- centralized in respect to the window
- Primary Workplace-centralized with front glazing
- Former workspace converted to conference room with storage area for library
- New desks-white working plane surface with dark wood stain at the sides(36” above floor)
Suggested Lighting Strategies

• Interior Light Shelf
  – Painted white

• Secondary ceiling lid (i.e. suspended drywall ceiling)
  – Would create higher reflectivity
  – Painted white

• Artificial lighting-incorporated into light shelf
Light Shelves
Sky View with Light Shelves

- Top of Tree 131'-0"
- Top of Parapet 129'-0"
- Top of Beam 122'-0"
- Top of Window & FF 117'-4"
- Top of Beam & FF 111'-4"
- FF 100'-0"
Suggested Lighting

• Downstairs
  – Two light shelves
  – Flooring adjusted to a lighter, more reflective color

• Ceiling Deck
  – Secondary lid
  – Painted white
  – Individual task lighting

• Planting area to north adjacent to structure
Bibliography

• Mitchell, Shawn. Personal Interview. 05 April 2006
• Jones, Jason. Personal Interview. 05 April 2006
• Sciotto, Miles. Personal Interview. 06 April 2006