

An aerial night photograph of Las Vegas, showing a dense grid of city lights in various colors (yellow, orange, red, green) against a dark sky. The lights are concentrated in the central and lower parts of the frame, with some larger, brightly lit areas that appear to be hotels or casinos.

# Lighting in Las Vegas

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- City lights at night
- Lighting in casino
- Lighting effects on behaviors
  - Seating and talking behavior
  - Pedestrian's behavior
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- New lighting device





Las Vegas has a visual appeal like no other city in the world. Hundreds of miles of neon and incandescent lights illuminate the Strip and downtown.

- large-scale sculptural lighting, Giant neon signs and flood lighting
- Low color temperature lamps are used
- Advertising on the rooftop is restricted (only on the rooftop of the taxi).





# Tokyo



- Advertising on the rooftop and the side of the building
- High color temperature lamps are used in outdoor and indoor lighting

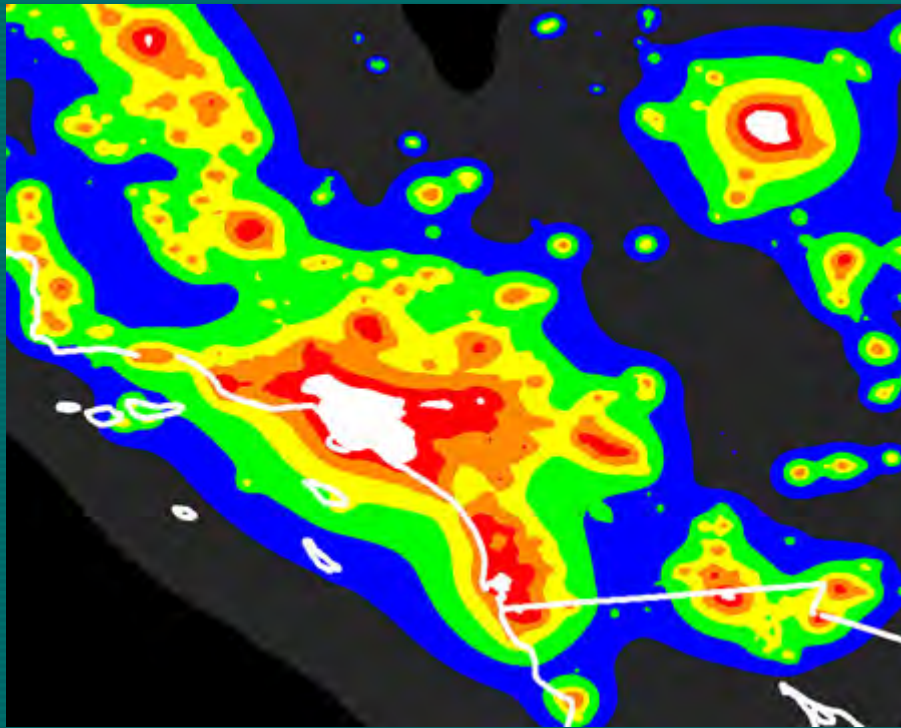


Bright sky

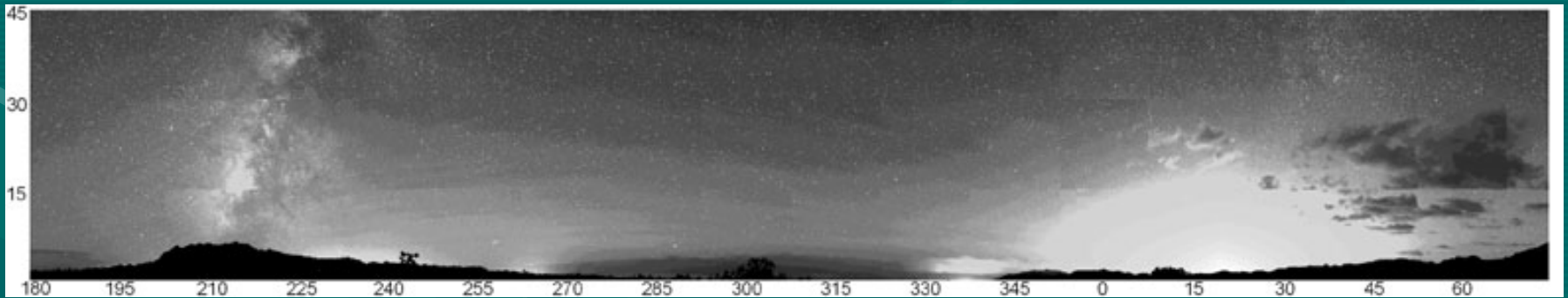


1 KW HID lamp



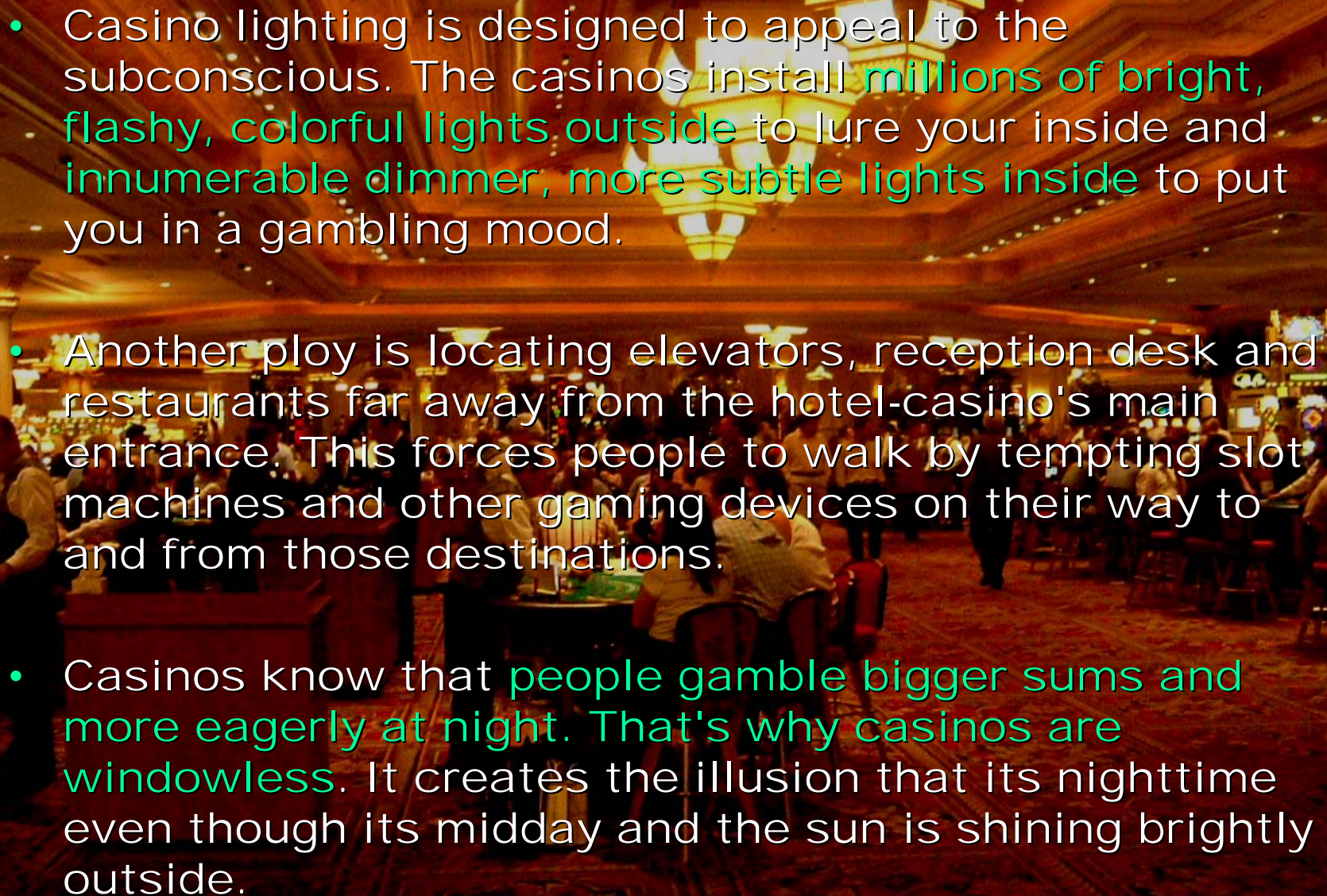


Southern California portion of the North American artificial light pollution map : The bright area in the upper right is Las Vegas.



This panoramic view of Mojave National Preserve clearly shows light pollution from Las Vegas in contrast with the darker, "natural" night sky. The river of light on the left is the Milky Way. Altitude and azimuth in degrees are indicated along the margin. Although somewhat degraded, the night sky above the southwestern desert national parks still harbors a valuable resource.



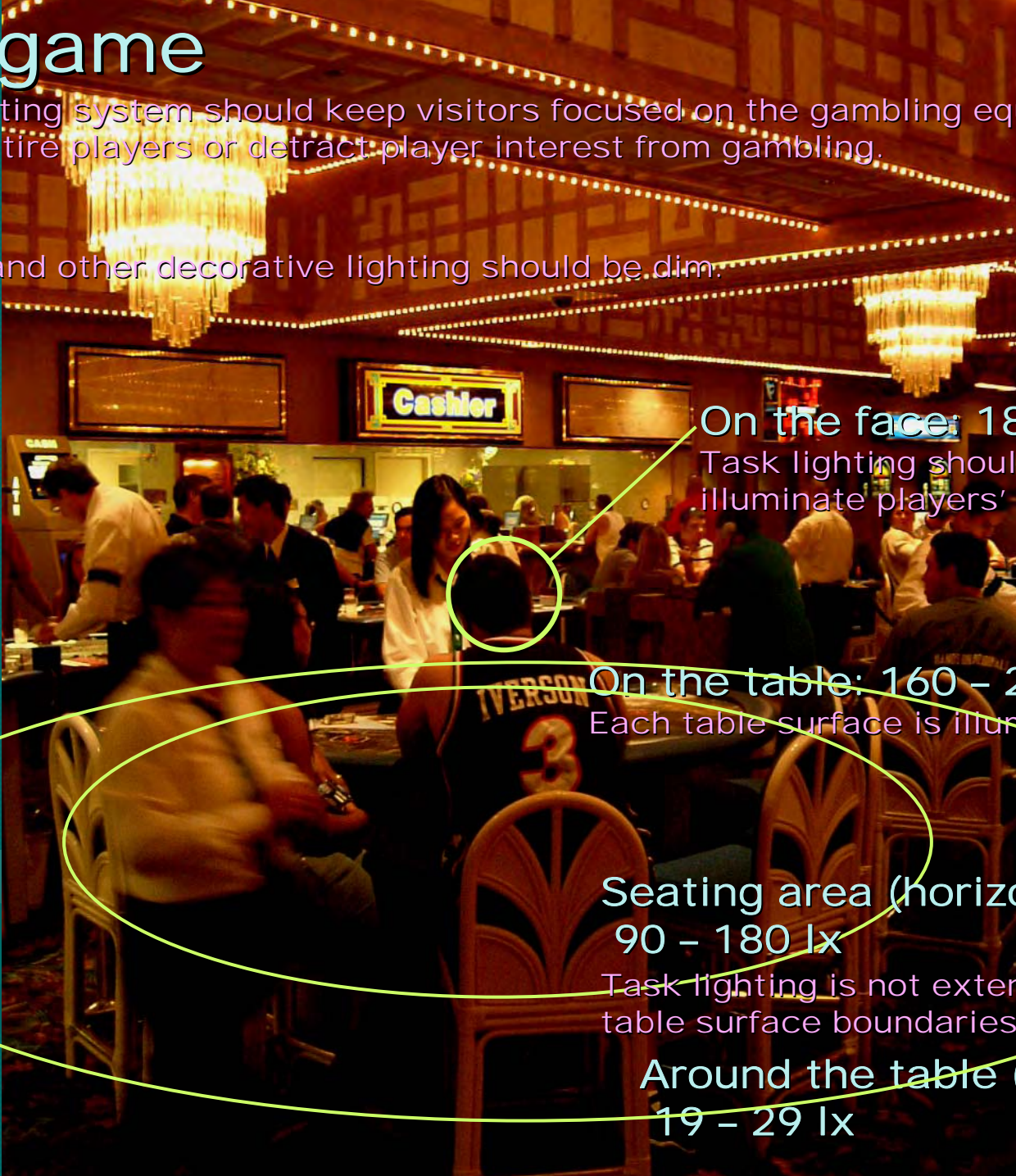
- 
- A photograph of a casino floor. The scene is filled with people playing at various gaming tables. The ceiling is high and features a large, ornate chandelier with multiple tiers of lights. The floor is covered in a patterned carpet. The overall atmosphere is warm and brightly lit, typical of a casino environment.
- Casino lighting is designed to appeal to the subconscious. The casinos install **millions of bright, flashy, colorful lights outside** to lure you inside and **innumerable dimmer, more subtle lights inside** to put you in a gambling mood.
  - Another ploy is locating elevators, reception desk and restaurants far away from the hotel-casino's main entrance. This forces people to walk by tempting slot machines and other gaming devices on their way to and from those destinations.
  - Casinos know that **people gamble bigger sums and more eagerly at night**. That's why casinos are **windowless**. It creates the illusion that it's nighttime even though it's midday and the sun is shining brightly outside.



# Table game

A casino lighting system should keep visitors focused on the gambling equipment, but it should not tire players or detract player interest from gambling.

Chandelier and other decorative lighting should be dim.



On the face: 18 – 34 lx

Task lighting should not illuminate players' face.

On the table: 160 – 290 lx

Each table surface is illuminated evenly.

Seating area (horizontal):

90 – 180 lx

Task lighting is not extend beyond table surface boundaries.

Around the table (horizontal):

19 – 29 lx



# Slot machine

Segment the casino into separate areas by breaking up long views.

Machines' signs are situated passengers' eyelevel.

Lighting near machines should be positioned and adjusted to prevent glare from the slot glass.

No decorative lighting should not be placed higher than 8 feet.

On the face: 37 – 80 lx

Overly bright light levels tire players.

Passage area (horizontal):  
11 – 65 lx

Seating area (horizontal):  
36 – 54 lx





## Direction signage



Signs should be clearly printed properly lit, but however, they should not be so bright or garish that they draw undue attention to themselves.

## Gambling promotion signage



- It should be designed to draw attention to the equipment beneath it rather than to itself.
- It can be landmark or focal point, helping visitors organize the casino layout.
- It can add excitement.
- It can act as a visual barrier, breaking up an expansive casino into smaller, more discrete areas and blocking the view of the rest of the casino beyond.





Uniform illumination  
Horizontal illuminance:  
500 - 1,000 lx

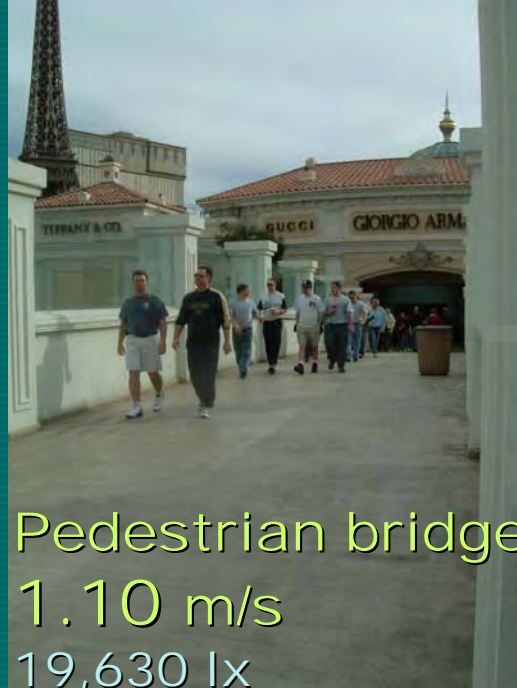
Pachinko is the most popular leisure activity in Japan, and for some it is much more than mere recreation. For many the garish neon signs, harsh bright lights and military-style marching music at the parlors produce a hypnotic effect that temporarily relieves the various stresses of their lives. It is a form of gambling that involves using steel ball-bearings in a kind of pinball system.



# Walking speed inside and outside the Bellagio



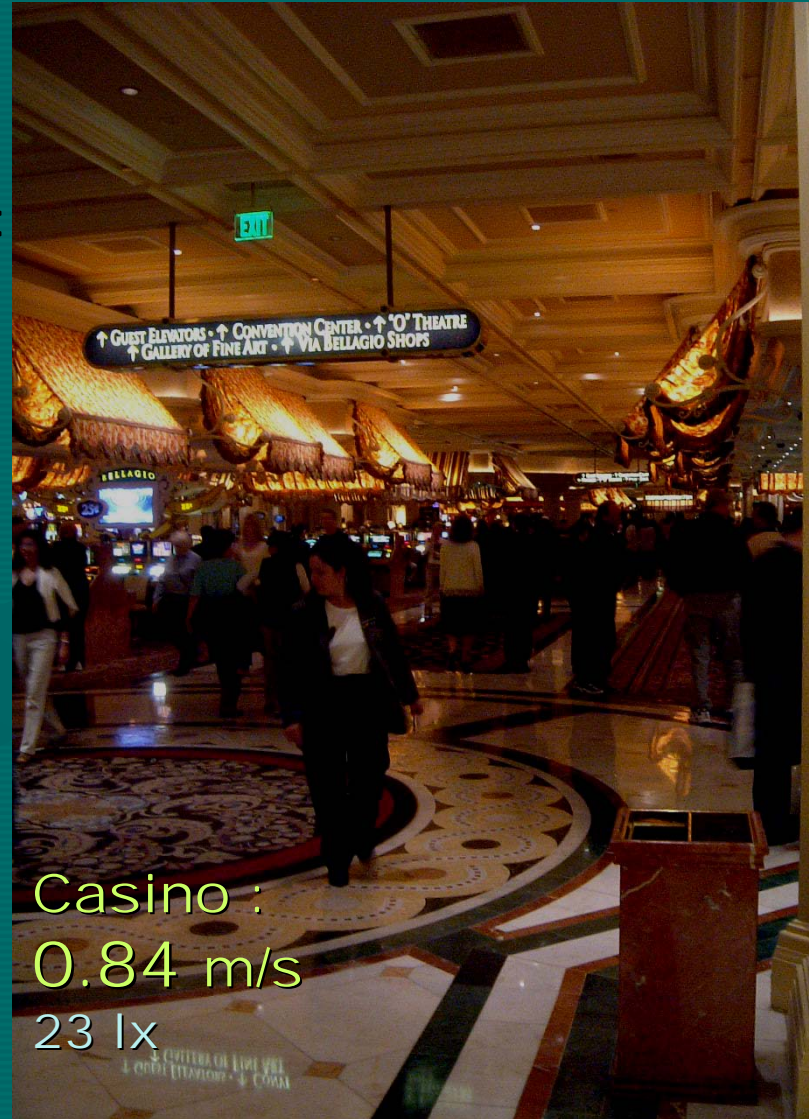
Street :  
1.17 m/s  
Floor  
illuminance  
13,300 lx



Pedestrian bridge:  
1.10 m/s  
19,630 lx



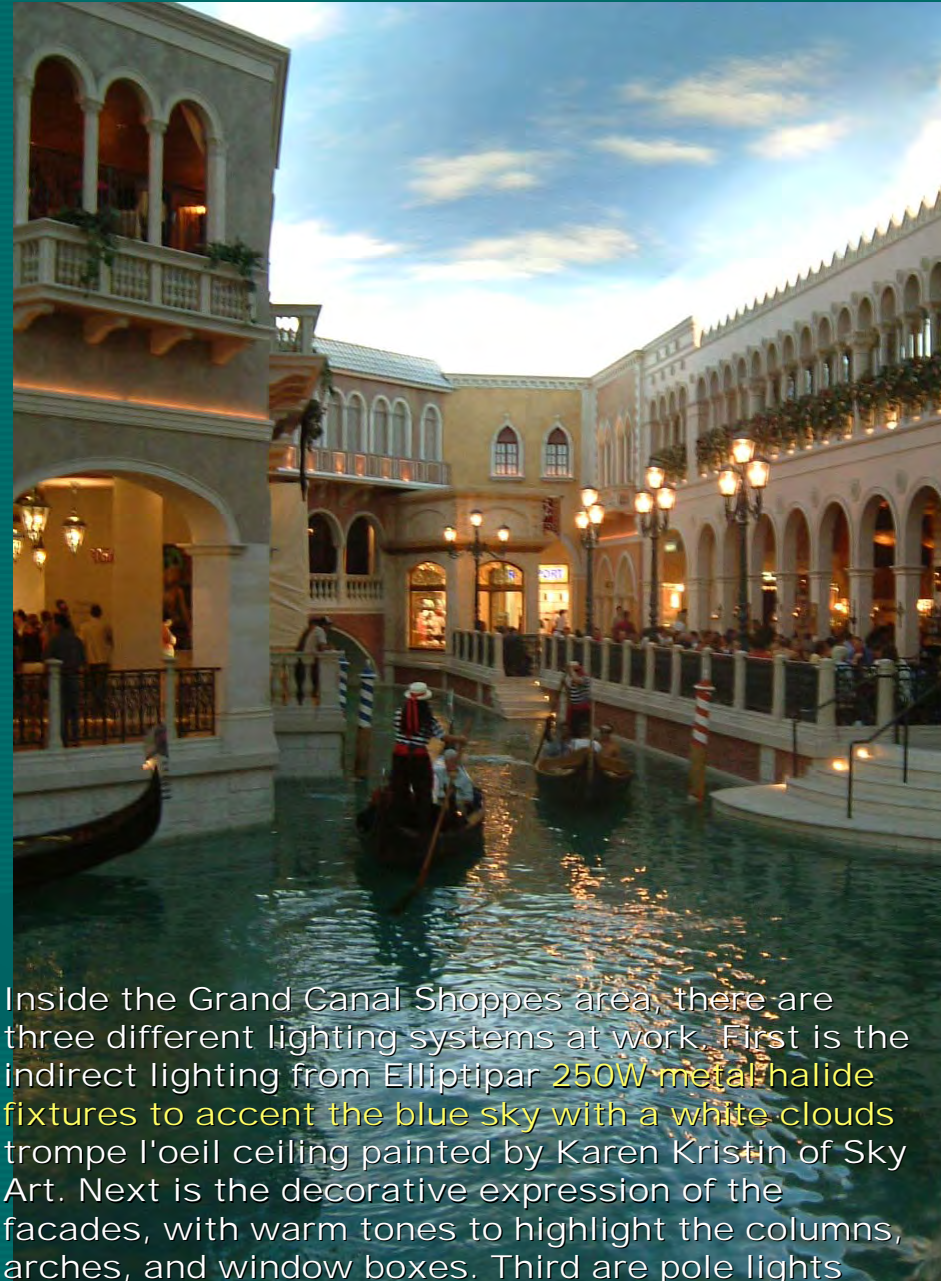
Shopping mall:  
1.08 m/s  
3,020 lx



Casino :  
0.84 m/s  
23 lx



# Skylight in Venice



Inside the Grand Canal Shoppes area, there are three different lighting systems at work. First is the indirect lighting from Elliptipar 250W metal halide fixtures to accent the blue sky with a white clouds trompe l'oeil ceiling painted by Karen Kristin of Sky Art. Next is the decorative expression of the facades, with warm tones to highlight the columns, arches, and window boxes. Third are pole lights with lanterns at the pedestrian level, as well as uplights on the steps to the gondolas.



# Skylight in Paris





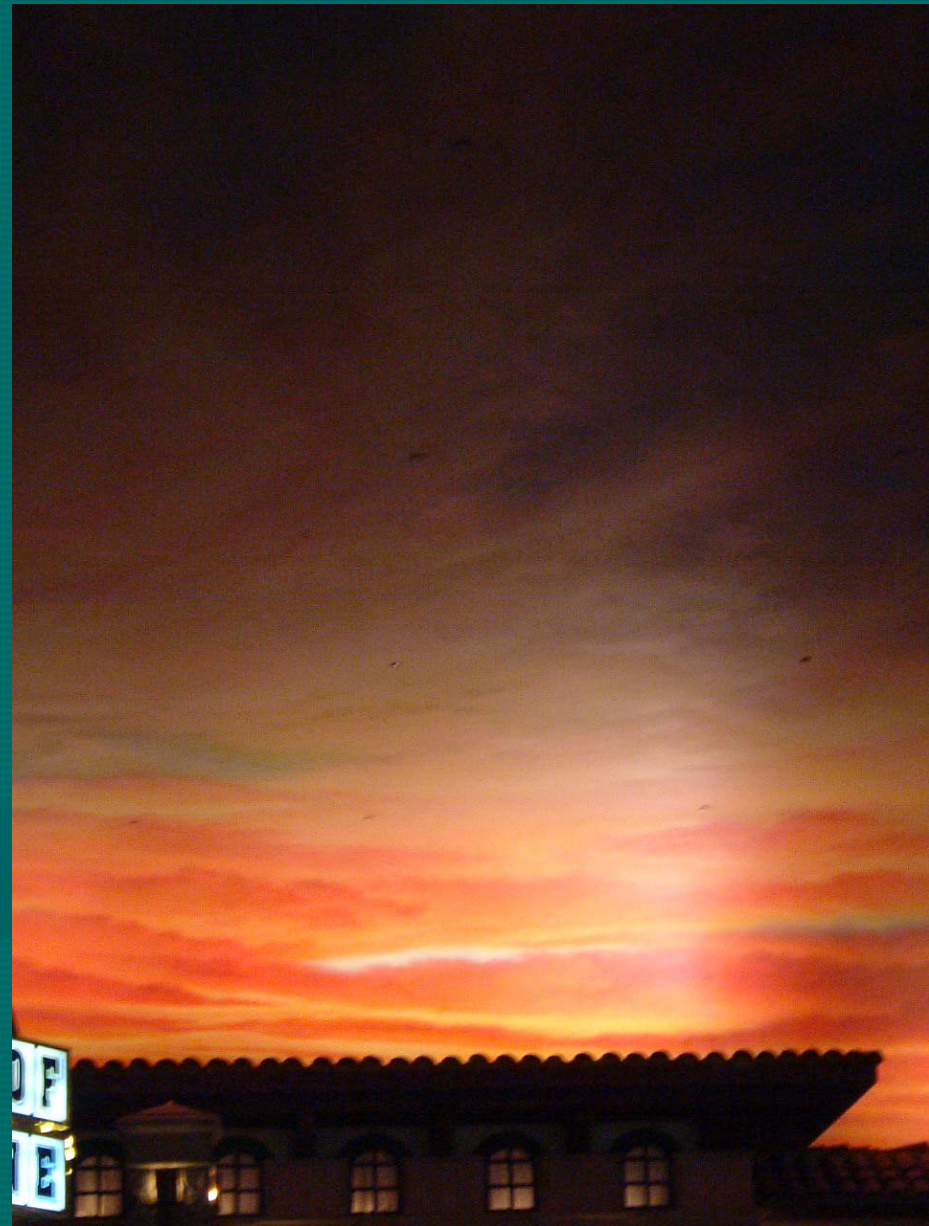
# Desert Passage at the Aladdin



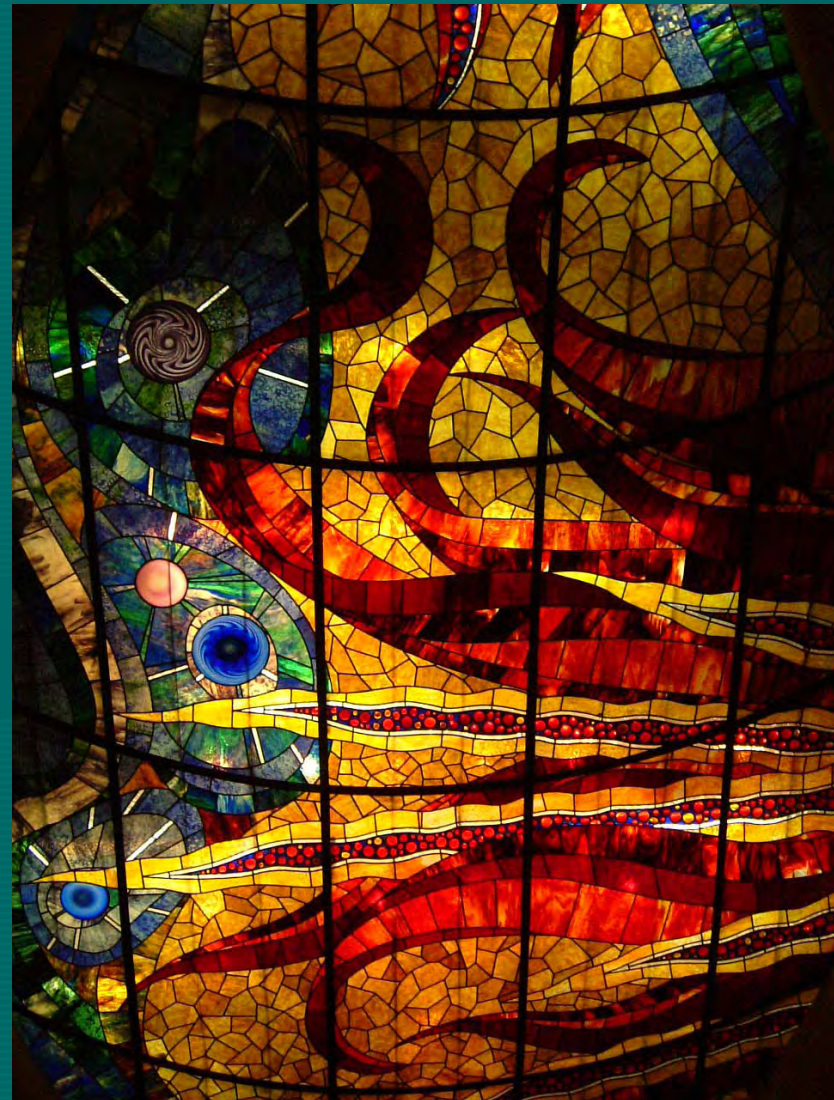
The live rainstorm at Merchant's Harbor, featuring thunder, lightning and pouring rain



# Sunset Station Casino









# Forum Shops



scene facade with vaulted ceilings painted like a natural sky -- has been widely copied in casinos in and out of town. The mammoth domed ceiling changes color to simulate day , and night.









These 1k cyc strips are fitted with FX® dichro-shields and EZ-GLASS™ lenses for many years of maintenance free performance.

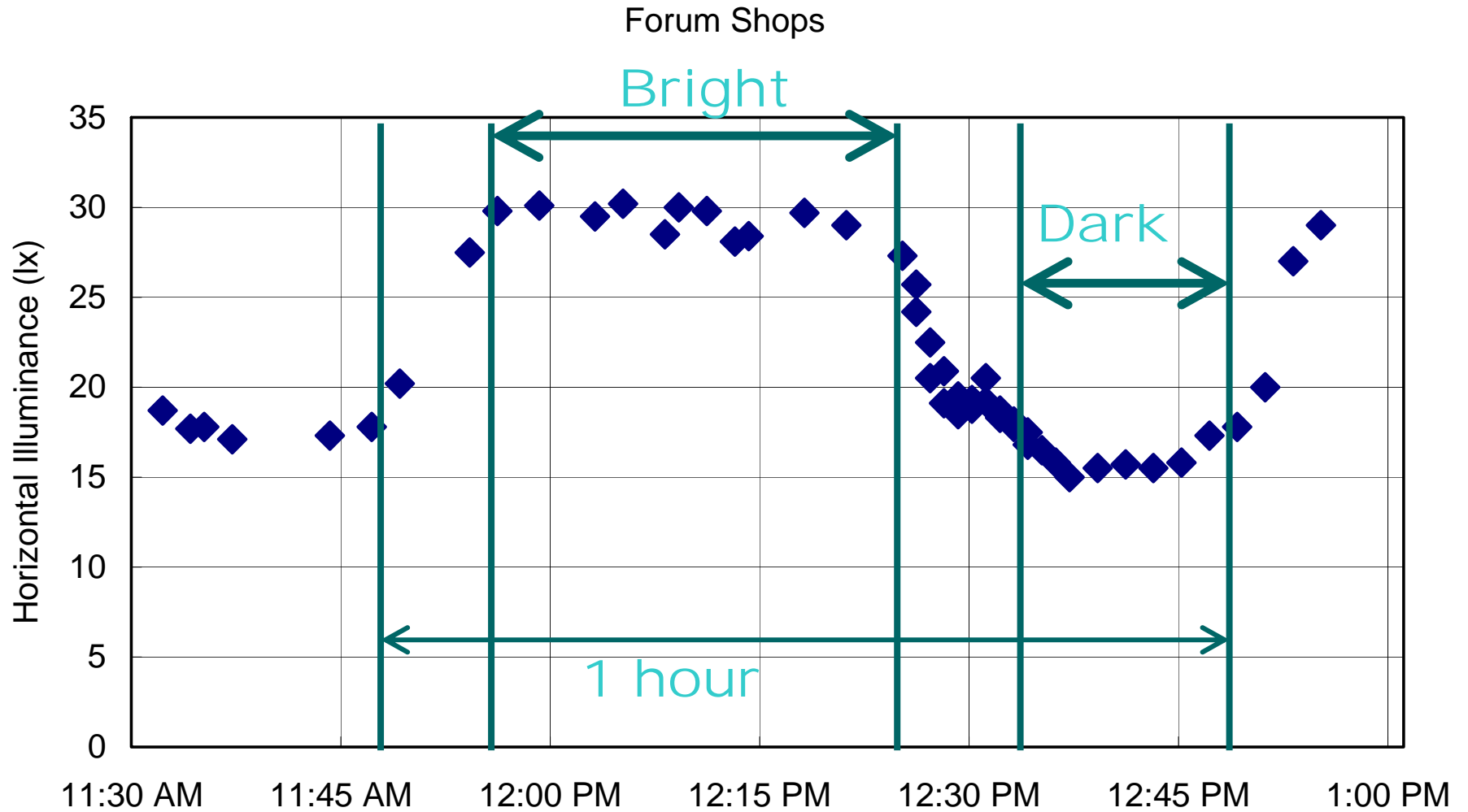








# Forum Shops : The Sky







“VenusFort”, which opened in August 1999, is the first theme park-like shopping mall in Japan. Inside the enclosed building, 17th~18th century European-style streets come to life. The open ceiling manifests the ever-changing sky from the clear blue sky, to the evening sunset, and to the darkness of night.



Street: 10-120lx,  
average 30lx(bright time)  
Inside shop: 1000-1500lx





天野和男  
MAKO  
VIBRATI





ue  
3E 068

Play Street  
Challenges  
to 11/11/11

Call the best  
1-800-733-3333  
11/11/11

Call the best  
1-800-733-3333  
11/11/11

Call the best  
1-800-733-3333  
11/11/11

Call the best  
1-800-733-3333  
11/11/11

Call the best  
1-800-733-3333  
11/11/11

Regency Avenue

Call the best  
1-800-733-3333  
11/11/11

Call the best  
1-800-733-3333  
11/11/11



316 Tambo  
226 Versace Home Collections  
318 Villa Reale

403 Sushi Roku  
154 OPM - Beyond Ordinary  
Nightlife

**SERVICES**

- ATM** ATM/Cash
- Car Wash** Car Wash
- CF** Cameras & Film
- 206 Concierge Center
- PC** Phone Card Machine
- 206 Soleil Resorts
- V** Valet Parking
- 320 VEGAS.com
- 206 Wheelchair/Stroller

**ENTERTAINMENT/  
MUSIC / VIDEO**

313 Sony Style

**ATHLETIC APPAREL/  
ACCESSORIES**

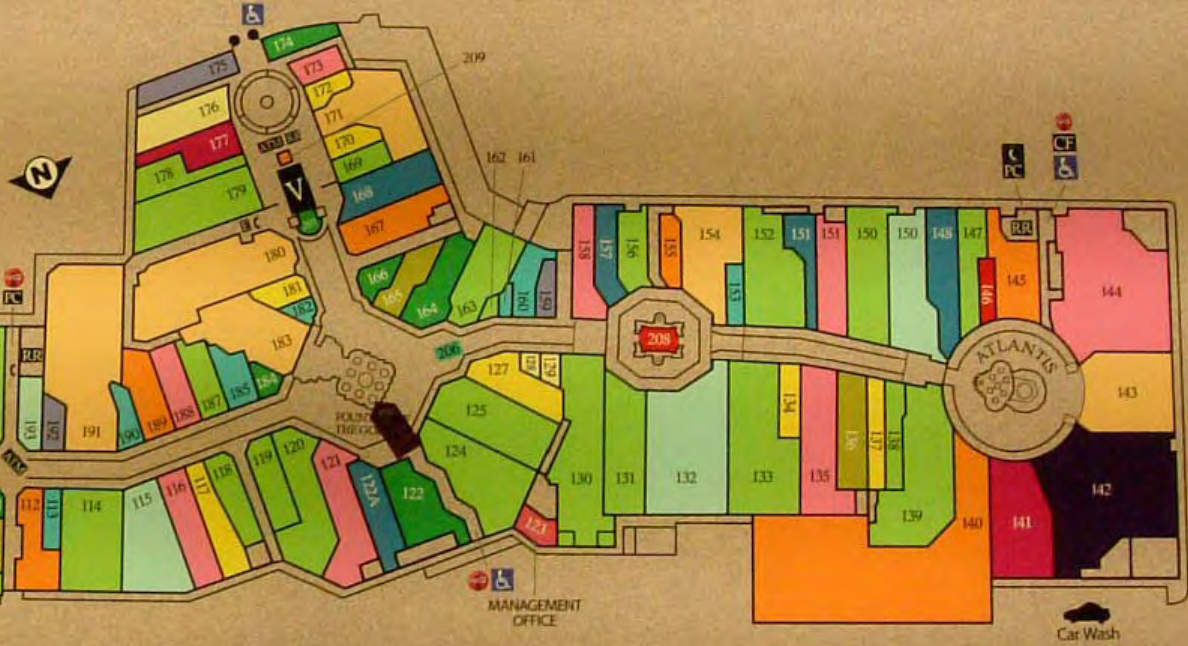
142 NIKETOWN  
102 Saint Andrews Golf Shop  
202 Sports Logo

**SPECIALTY FOOD**

209 Breathe Oxygen Bar  
208 Cafe Della Spiga  
104 Cafe Express  
232 Casa Fuente Cigars  
146 Fat Tuesday  
407 Ferrara's Cafe  
209 Forum Cafe  
301 Vosges Haut-Chocolat

**GENERAL INFORMATION**

123 Management Office



- TELEPHONES **C**
- VALET PARKING **V**
- ELEVATORS **E**
- RESTROOMS **RR**
- ATM **ATM**
- PHONE CARD MACHINE **PC**
- CAMERAS & FILM **CF**
- COCA-COLA VENDING MACHINE **CC**
- WHEELCHAIR ACCESS **♿**

FORUM SHOP'S ENTRANCE  
FROM LAS VEGAS BLVD.










## Bertolini's

food in the middle of the Forum Shops at Caesars. The restaurant is in the best place possible for people watching. The portions are huge and the service is good.



# Posture and Eye contact

	1	2	3	4	5
Posture					
Eye contact time	<b>Lean back</b> ~20%	20%~40%	<b>Vertical</b> 40%~60%	60%~80%	<b>Lean forward</b> 80%~





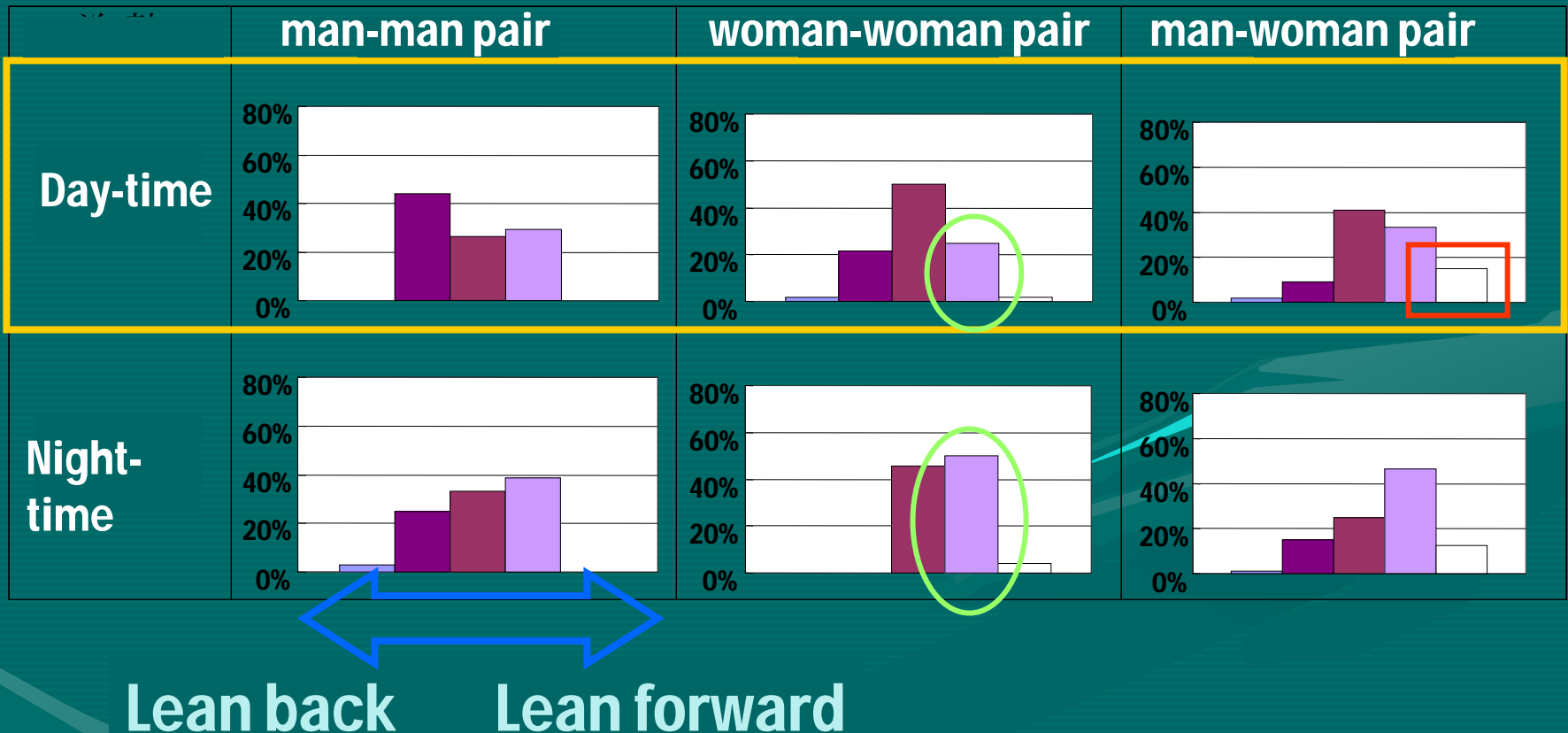
# Observation of Behavior in Public Space



Targeted space : Open air café in Tokyo  
Daytime and Nighttime in Summer



# Result of posture in Tokyo



- Man-man pair: Lean back in their chairs

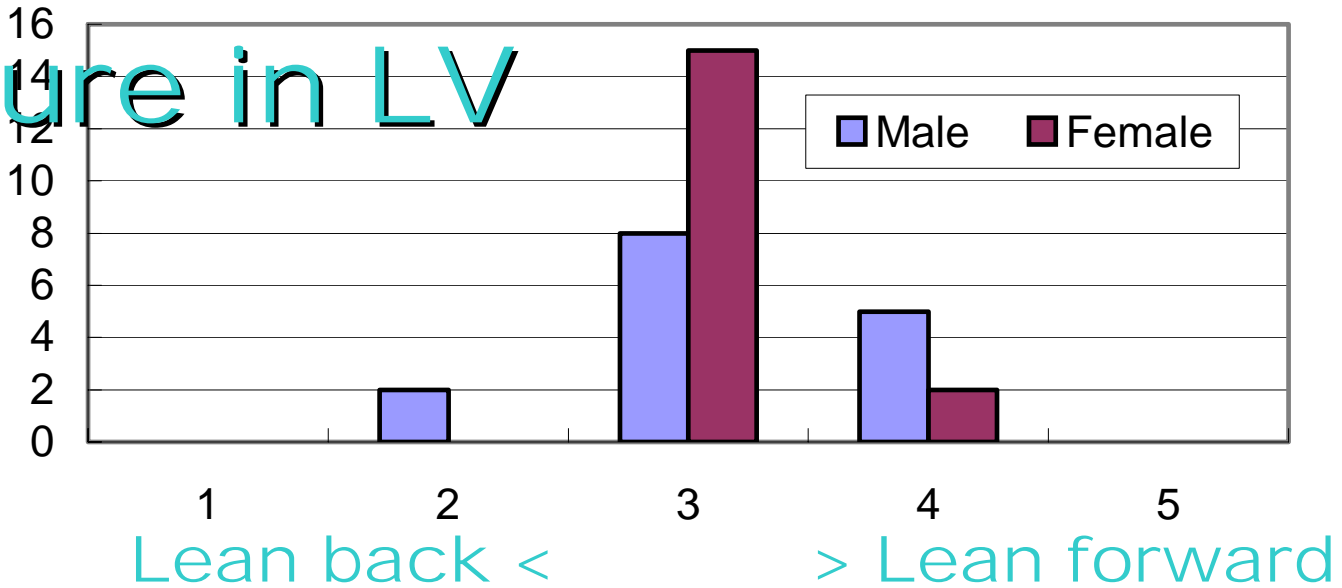
- Woman-woman pair: Lean forward in night-time



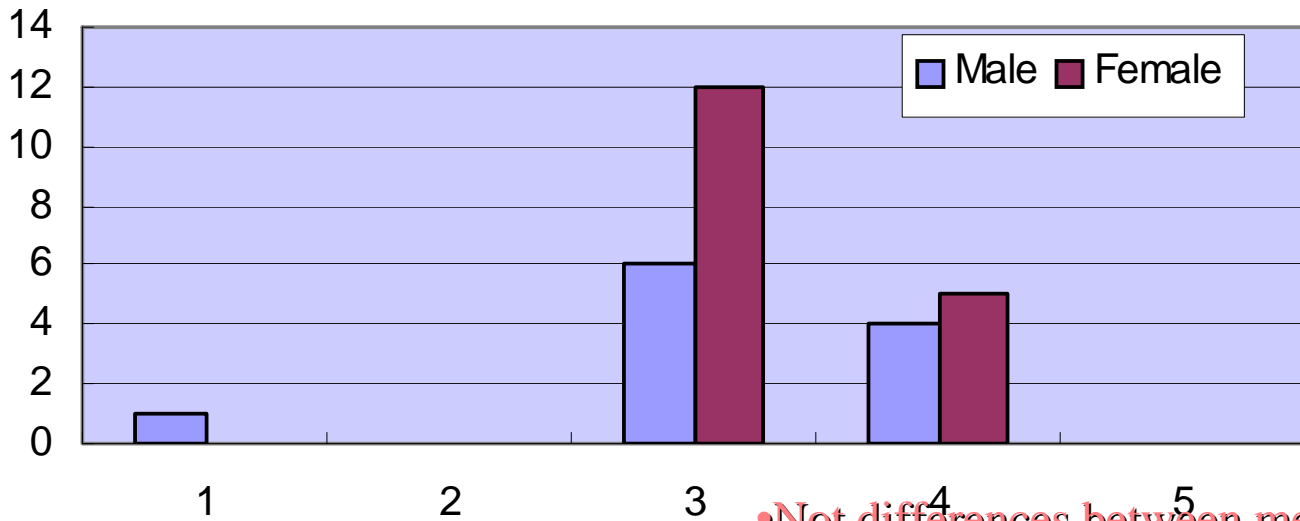
# Posture in LV

Bright

### Posture at Bright



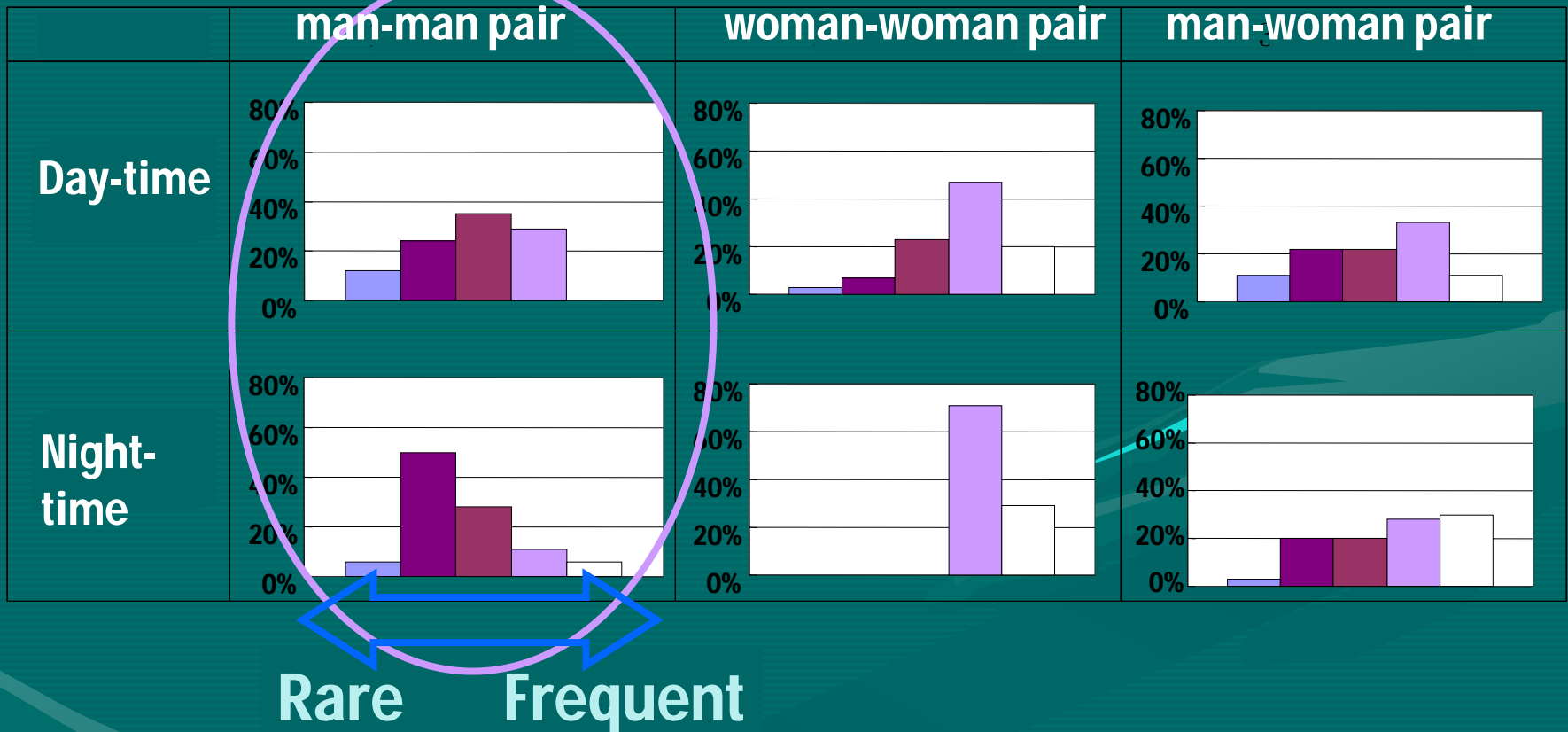
Dark



- Not differences between men and women.
- Women lean forward at dark.



# Result of Eye-contact in Tokyo

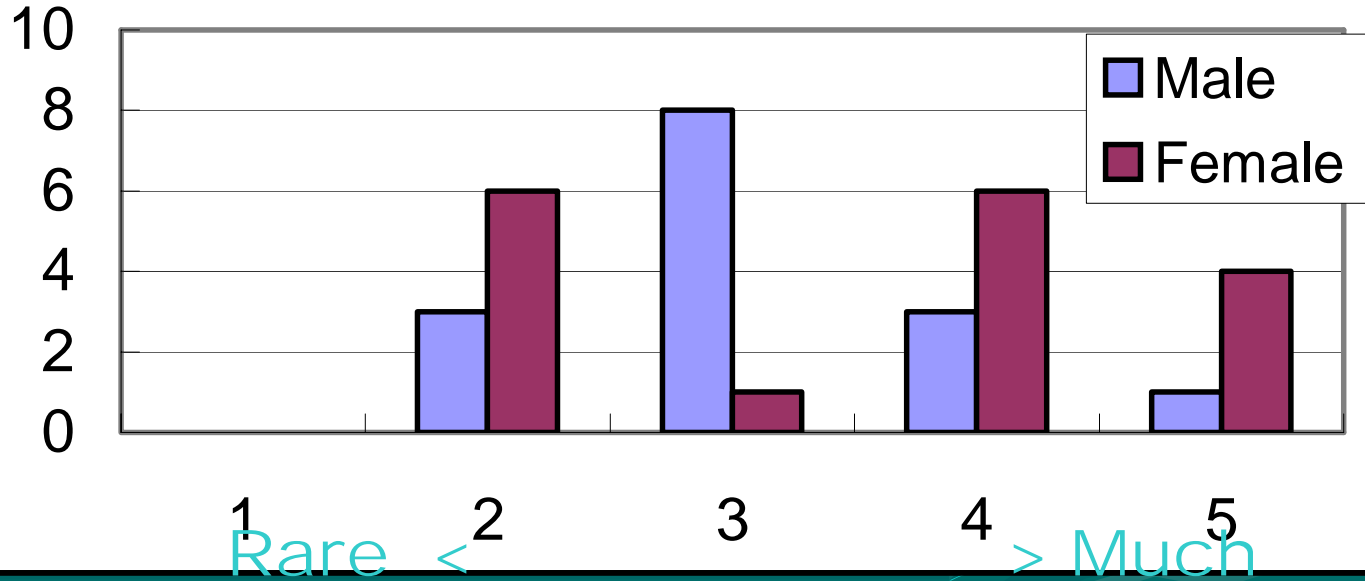


- Man-man pair: Rare eye-contact especially in night-time
- Woman-woman pair: Frequent eye-contact in night-time

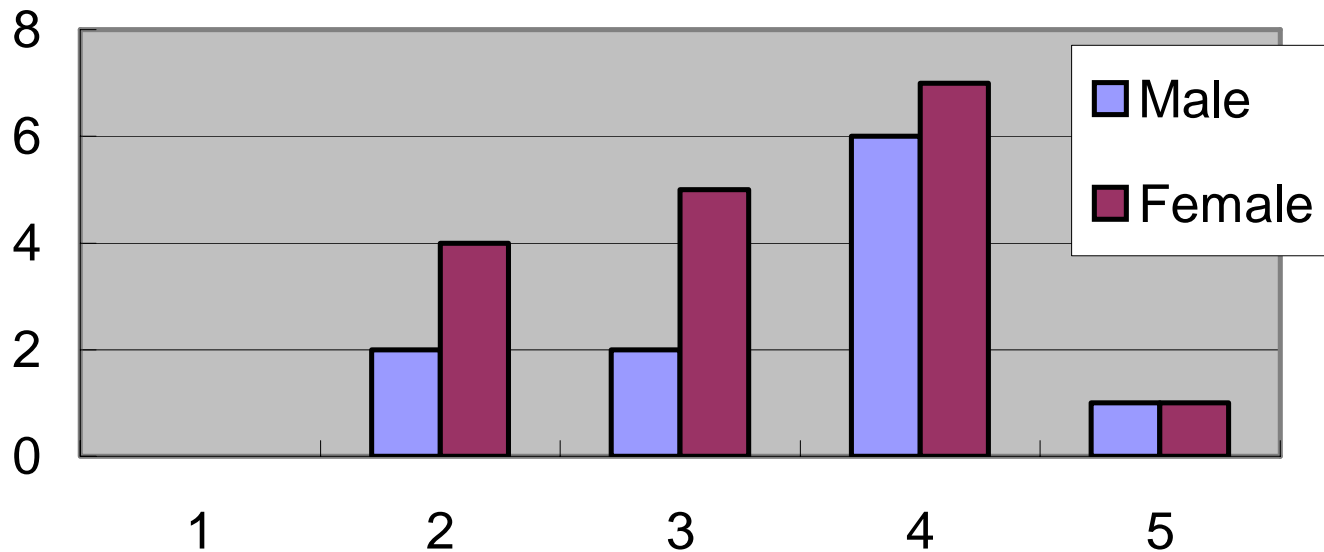


# Eye Contact in LV

Bright



Dark



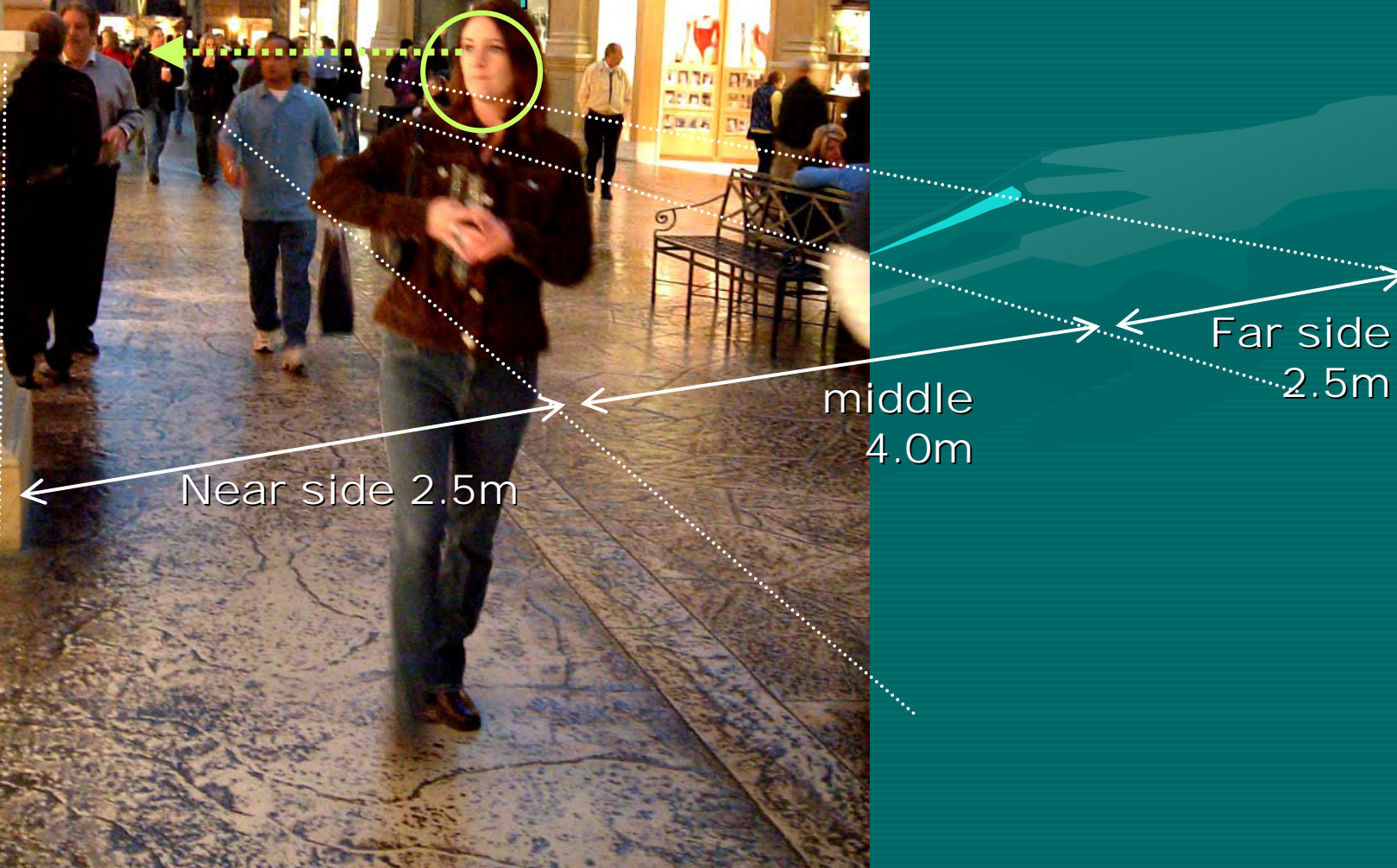
•Not differences between men and women.

•Opposite result in men's eye-contact from the result in Tokyo



# Pedestrians' behaviors

Face toward the shop





# Pedestrian's watching behavior

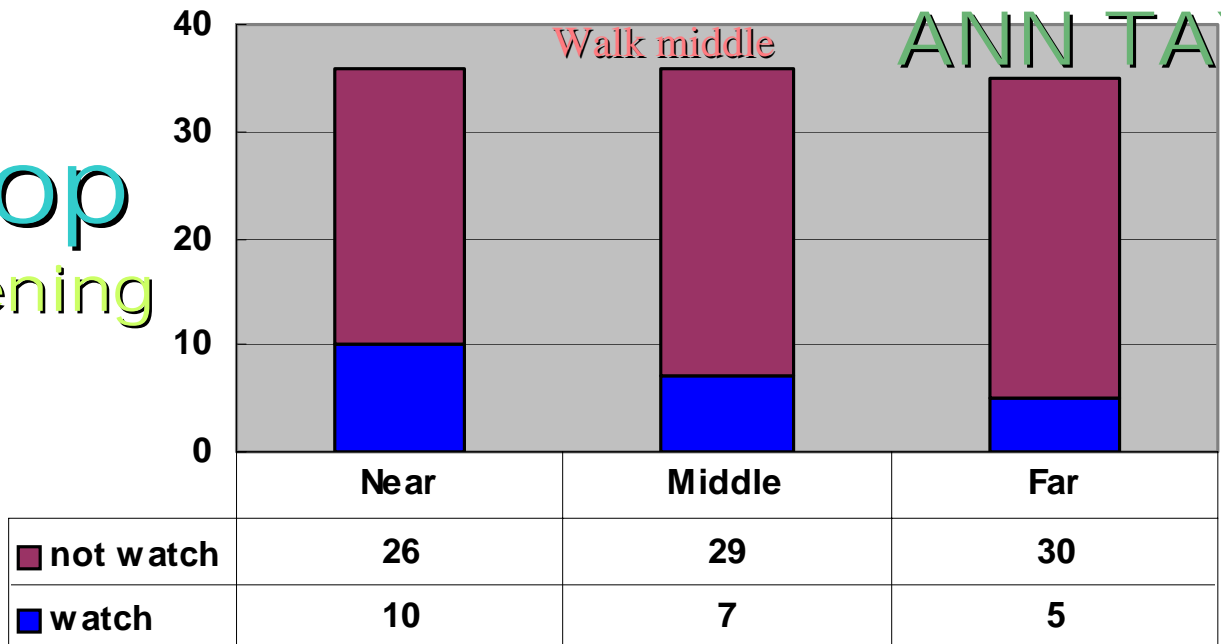
Ann Taylor, women's fashions





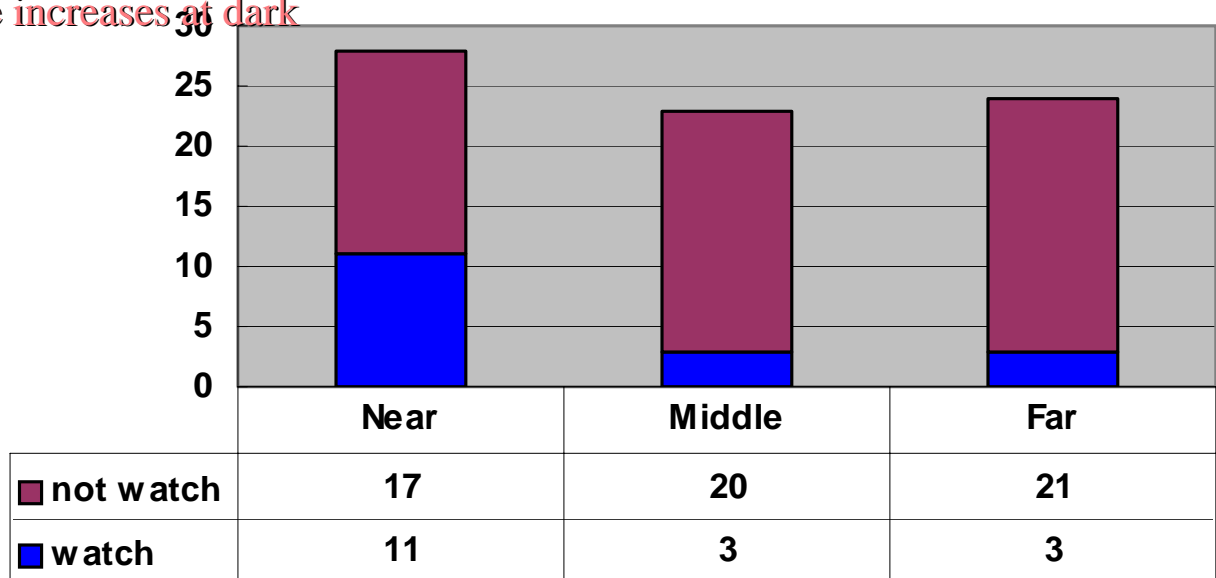
# Watch the Shop Before Opening Bright

ANN TAYLOR



Watching rate increases at dark

Dark

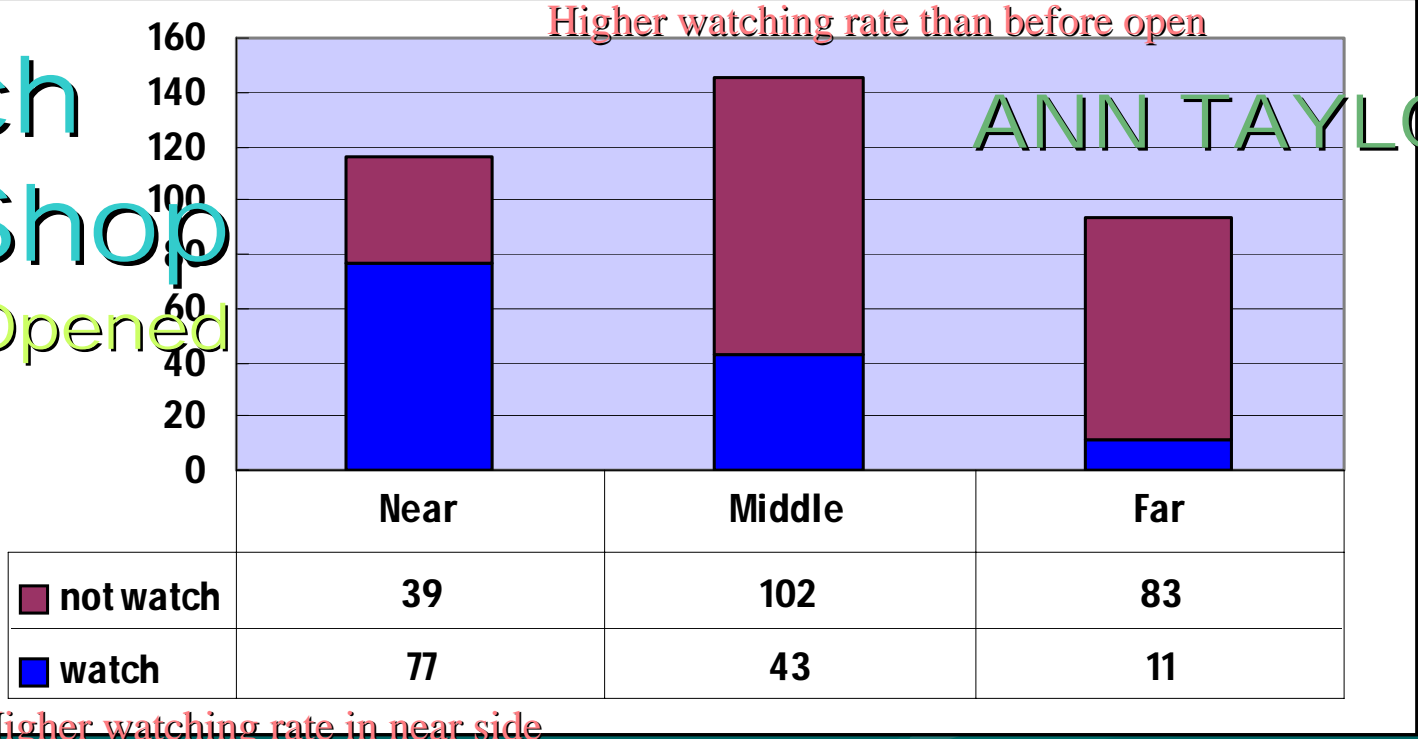




# Watch the Shop

During Opened

Bright

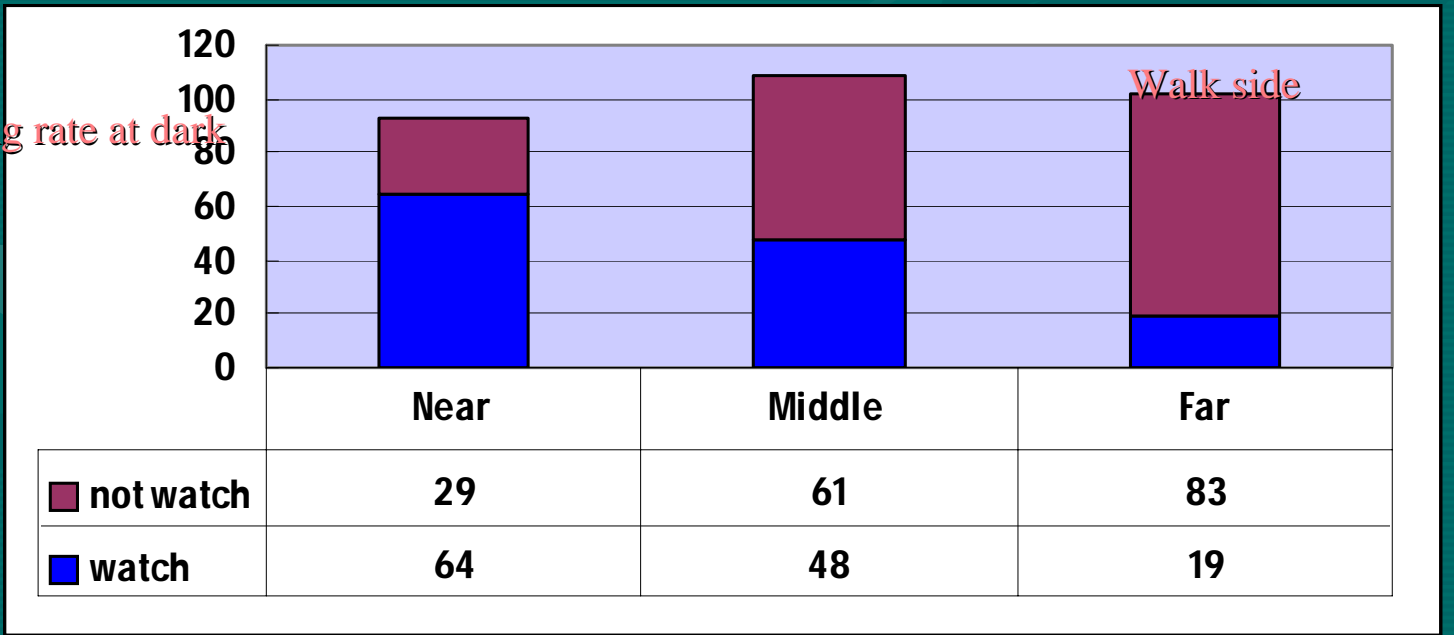


ANN TAYLOR

Higher watching rate in near side

Higher watching rate at dark

Dark





# Pedestrian's watching behavior

BVLGARI

- Jewel, watch
- Darker show window



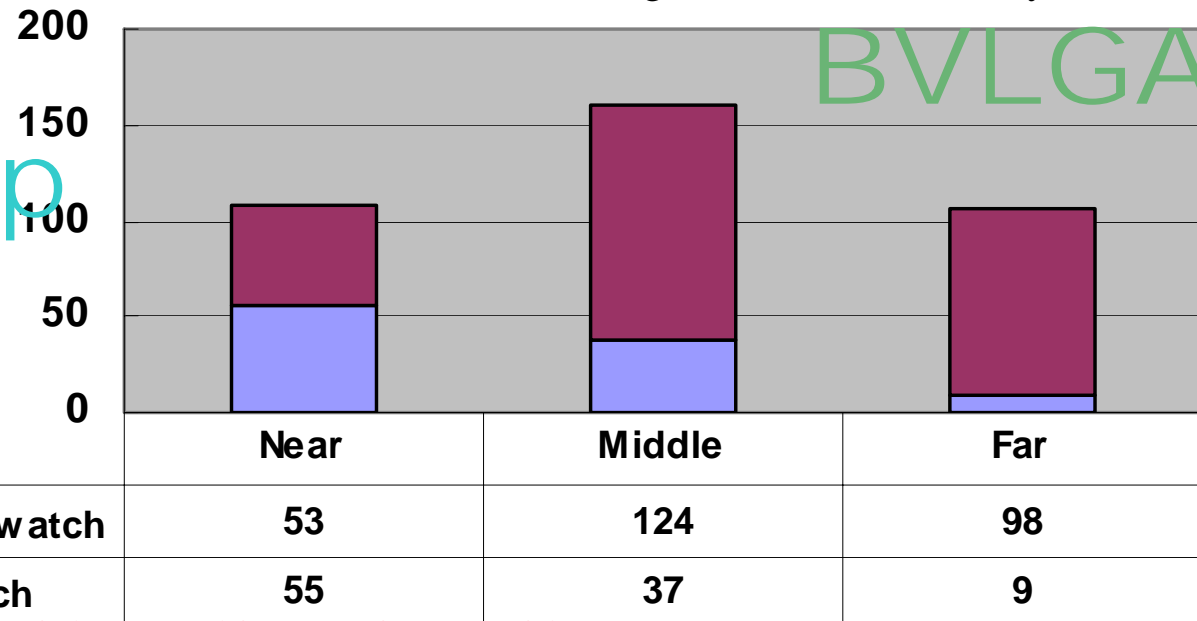
Watch  
the Shop

Be Opened

Bright

Lower watching rate than the Ann Taylor

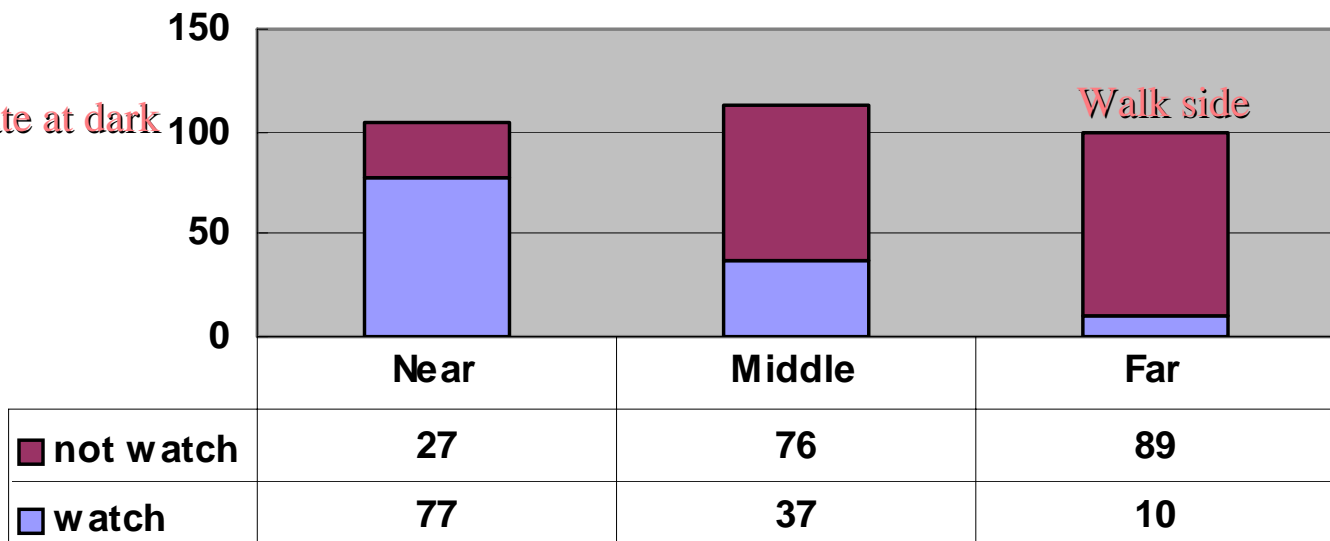
BVLGARI



Higher watching rate in near side

Higher watching rate at dark

Dark



Walk side



# Neon



Neon signs first appeared in Paris around World War I (1910), then were brought to Los Angeles in 1923 to light a Packard car dealership in the mid-Wilshire Boulevard area. Neon came to Las Vegas in 1929, with a number of small projects over the years. The first major neon sign in Las Vegas was the Young Electric Sign Co.'s project for the Boulder Club, unveiled in 1954. For half a century, Las Vegas has been the world capital of neon signs.





Neon signs in Osaka

Hong Kong  
Large signs are hanging over streets

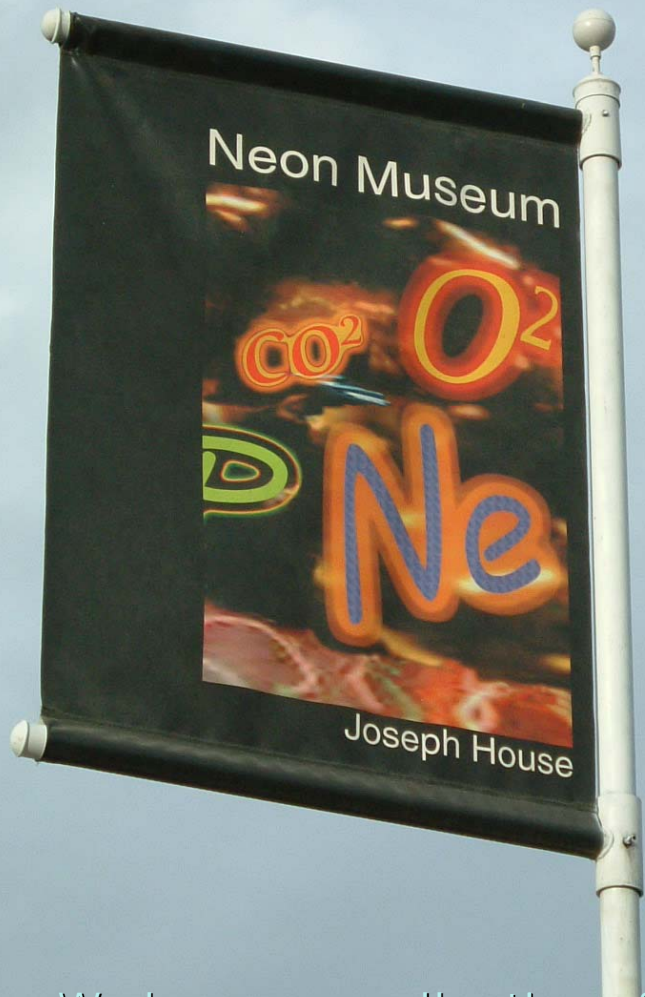




The Neon Museum's mission is to collect, preserve, study and exhibit neon signs and associated artifacts to inspire educational and cultural enrichment for diverse members of our international community.







We keep our collection of non-restored historic signs outdoors on a 3 acre site in Las Vegas. The signs have been donated or loaned by individuals, businesses and sign companies such as Young Electric Sign Company (YESCO).









Please remember the signs in The Neon Museum collection are irreplaceable historic artifacts, not props, and must be treated as such. Our goal is to limit further damage and deterioration of the signs so that future generations will be able to view, appreciate and learn from them.





Most of the signs sit, dilapidated, in the bone-yard awaiting a patron to foot the bill for refurbishing some of Las Vegas' former glory.







**The Hacienda Horse and Rider**  
The first sign to be put on display on Fremont Street in 1996. The Hacienda Horse and Rider was originally installed in 1967 at the Hacienda Hotel. It was designed by Brian Leming and built by Young Electric Sign Co. (YESCO)



**Aladdin's Lamp**  
was originally installed in 1966 at the Aladdin Hotel. It was installed as part of the Neon Museum on July 8, 1997. It was designed by Raymond Larson and built by YESCO.









The Museum of Neon Art (MONA) is a non-profit, cultural and educational organization which exhibits, documents and preserves contemporary fine art in electric media and outstanding examples of neon signs.











For more than 75 years, the name Young Electric Sign Company (or YESCO) has been synonymous with the bright lights and colorful neon of Las Vegas.



Heat the glass tube and bend it



Blow out

1600 - 2200 F





The wide variety of colors available in neon signs are created in three ways, or any combination of the three.

### 1. Inert gas.

We use 2 inert gasses, neon and argon/mercury. Neon gives off a reddish-orange color, while argon/mercury is a light blue.

### 2. Fluorescent powders.

Many neon tubes are coated on the inside with fluorescent powders that filter out different colors from the light spectrum. In combination with the different gasses, an even greater number of colors are achieved. For instance, a green tube, filled with argon/mercury (blue gas) will light up green. Fill the same tube with neon (red gas) and it lights up orange. Likewise a blue tube, filled with blue gas will light up blue, and the same blue tube filled with red gas will light up pink.

### 3. Colored glass.

Finally, the use of colored "classic" glass is an old world method which achieves the most vivid colors (reddest reds, deepest blues, etc.) but they are not as bright as other neon. They are also more costly, so are not used as widely for signs as they once were. However, for neon artwork, they are unparalleled in beauty.





The Frontier and the Stardust retain their classic neon fronts.

Classic neon hotel signs remain. The best of all is the bulbous rolling knob of light fronting the Flamingo.



La Concha and Holiday motels on the Strip are a throwback to Vegas' great gas light era.

Nostalgia for neon even has some Las Vegas' speaking fondly of the garish Circus Circus clown sign.









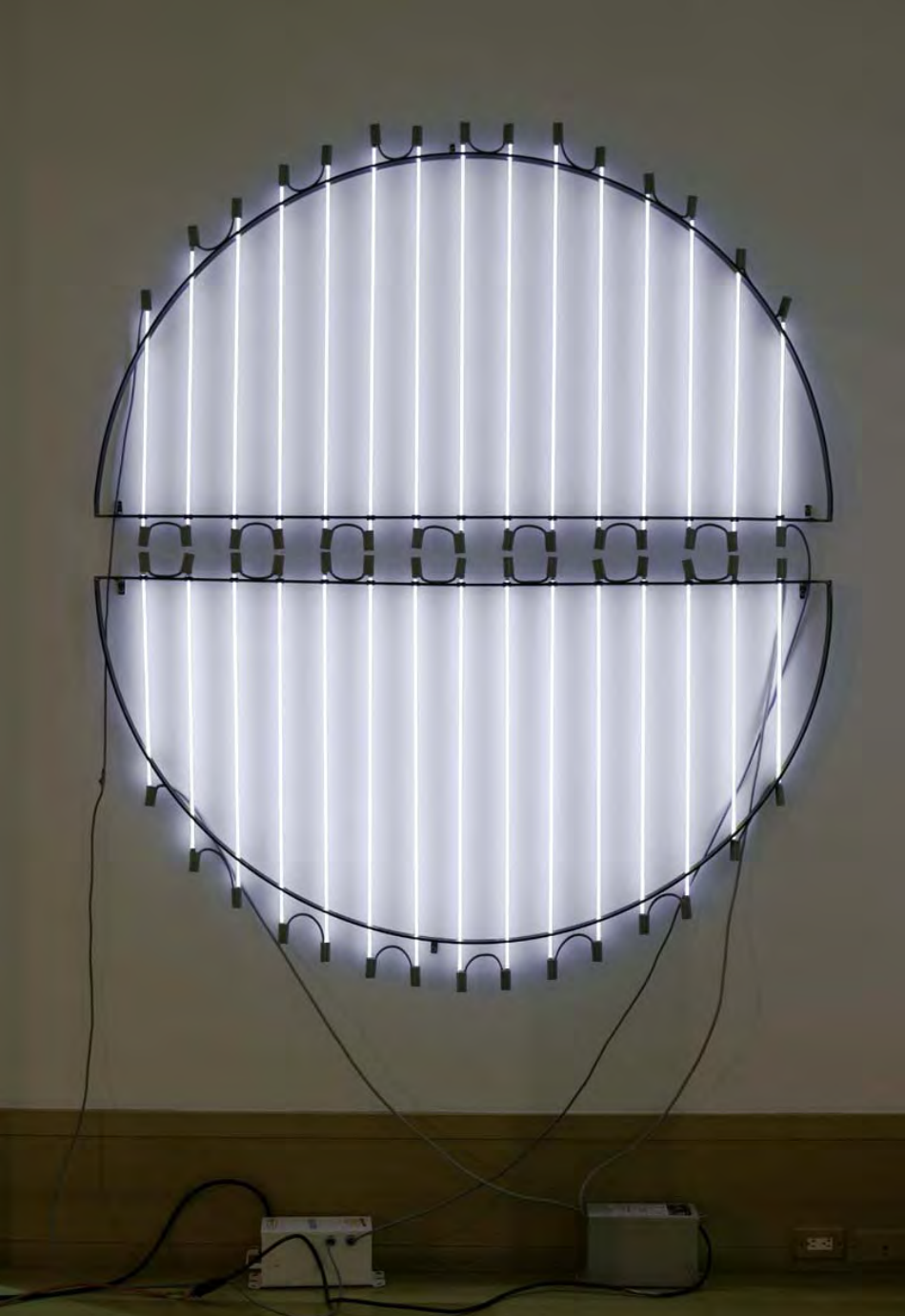
Paintings by  
Chad Brown





Pasha Rafat





*Solo exhibition, Museum of Contemporary Art, San Diego*





*Pasha's studio at his home*





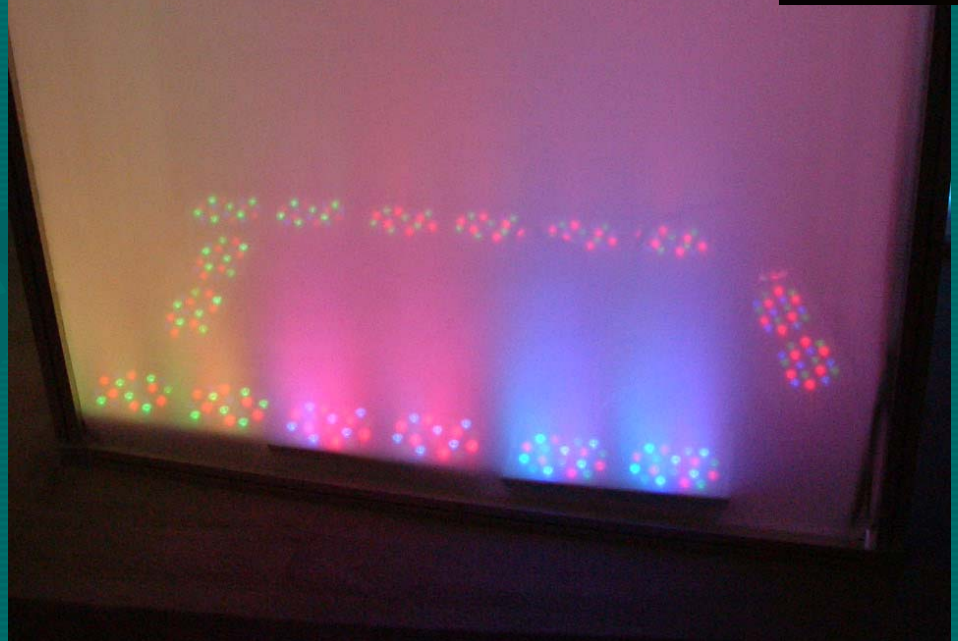
*LED light tube*



# LED Display



Las Vegas' new mega-resorts have fallen in love with the massive baseball-stadium-style video-screen signs.







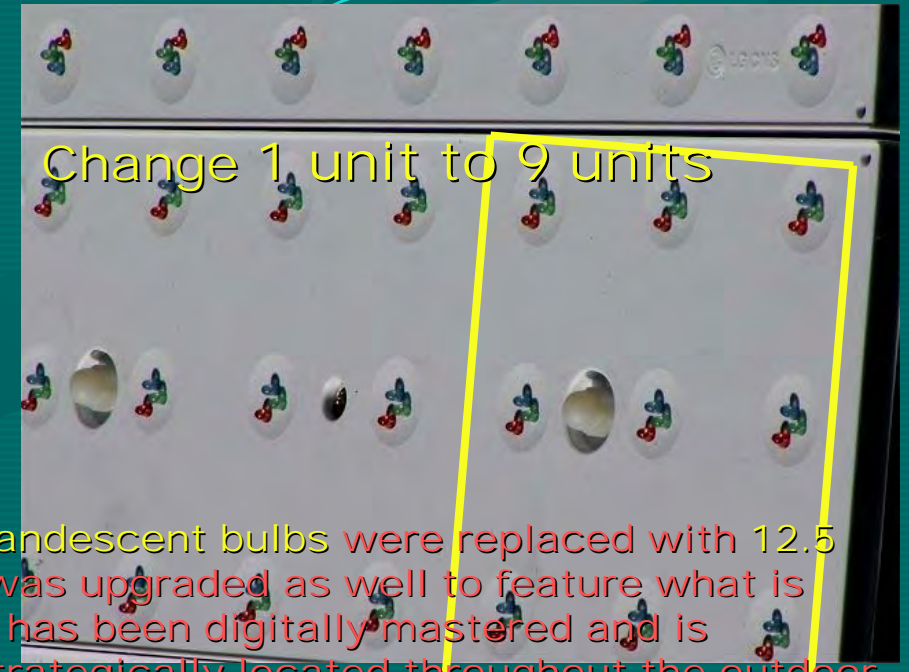
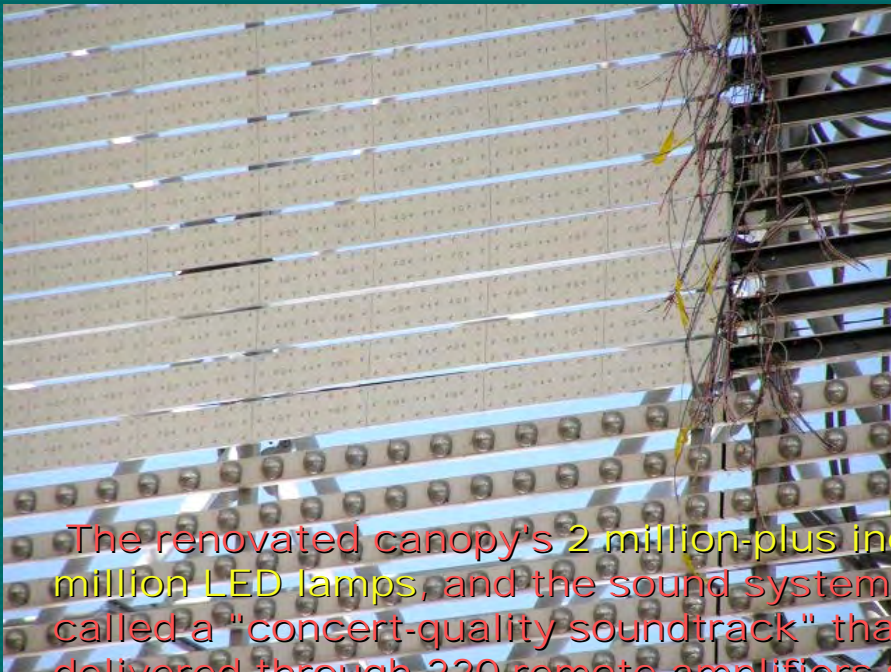












The renovated canopy's 2 million-plus incandescent bulbs were replaced with 12.5 million LED lamps, and the sound system was upgraded as well to feature what is called a "concert-quality soundtrack" that has been digitally mastered and is delivered through 220 remote amplifiers strategically located throughout the outdoor mall.

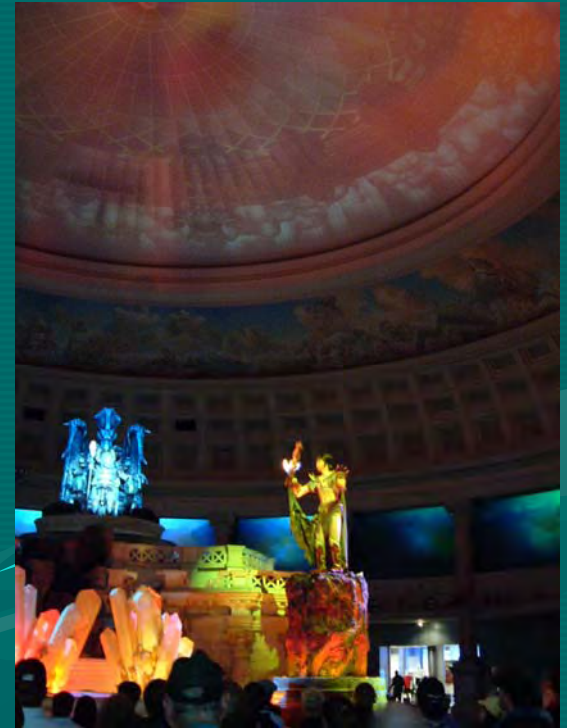




Translucent display using LED lamps



# LCD (Liquid Crystal Display) projector





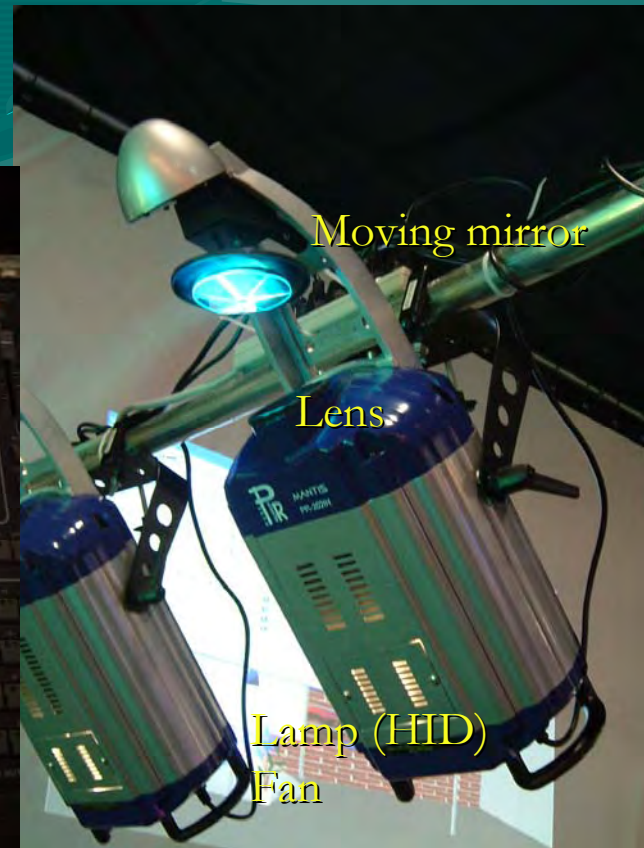
# Moving light



Moving body luminaires



Lighting console



Moving mirror

Lens

Lamp (HID)

Fan



# La Femme

Elegantly balances sensuous choreography with a combination of light effects and projections to create a moving canvas of skin, where reflections and images meet in a kaleidoscope of colors and textured designs.

Another new number features visually lightweight acrobatic dance, creating an illusion that the dancers are floating in a sea of soft colors with zig-zag projected patterns.

