

# CITY OF CORAL GABLES

## --MEMORANDUM--



**TO:** Mayor Lago and Commissioners Castro, Fernandez and Menendez

**FROM:** Vice Mayor Anderson

**DATE:** May 19, 2023

**SUBJECT:** Prior Design Ideas for Parking Garage 1/Mobility Hub

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The purpose of this memo is to share with our newest Commissioners a broad overview of the prior discussions and presentations that I made in 2021 concerning the design of Garage 1, better known as the Mobility Hub, and to refresh the recollections of those who are still serving.

During early fall 2021, the design of the Mobility Hub was an issue before the Commission. A workshop was scheduled in November 2021 to hear public comment and design ideas. During the workshop, I expressed a variety of concerns regarding the aesthetics of the design, and then focused on the heat generated on the street because that would impact the walkability and outdoor dining usability of the sidewalk across the street. Copies of some of the photographs I showed during the workshop are attached for your review.

During the final vote on the design in December 2021, I presented additional information and design ideas in an effort to persuade a design that did not increase the heat on the street and sidewalks below during the daytime. I also expressed concern for the aesthetic design of the ramps with no screening for drivers who have fear of heights. An excerpt of the December presentation and photographs are attached along with a copy of the September 2013 BBC magazine article I discussed, *Who, What and Why: How does a skyscraper melt a car?*

## DESIGN IDEAS SHARED AT NOVEMBER 2021 WORKSHOP

“Living green walls can completely transform the façade of otherwise bare parking structures,” says Lea Ackerman, marketing coordinator for green-wall manufacturer GSKy.

“They can turn them into a central design element in developments rather than something to be hidden away.” See, [Parking in Action, Biophilia Enhances Parking](https://www.mydigitalpublication.com/publication/?i=705180&article_id=4010730&view=articleBrowser) at [https://www.mydigitalpublication.com/publication/?i=705180&article\\_id=4010730&view=articleBrowser](https://www.mydigitalpublication.com/publication/?i=705180&article_id=4010730&view=articleBrowser)





https://biophilic.design/biophilia/biophilic-design/mitosis-sustainable-living-modules-cloaked-in-plants/

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## MODERN ART DECO WITH AIR & LIGHT FLOW



Facade by Leong Leong. Photograph by Naho Kubota

"The facade, which is a pattern of curvilinear shapes punched and bent out of titanium-coated stainless steel, creates a visual effect that looks like the shimmering patterns of light on the surface of water from a distance," said firm partner Christopher Leong. "From below, it looks like the foliage of a palm tree."

See, <https://www.dezeen.com/2015/06/02/iwamotoscott-leong-leong-wrap-miami-parking-garage-perforated-screens/>

## MODERN ART DECO WITH AIR & LIGHT FLOW



Photograph by Robin Hill

San Francisco-based Iwamoto Scott designed the building's southeastern facade, which features a tessellated composition of aluminum panels.

Comprising diamond-shaped apertures in six different sizes, the blue-tinted screen hides concrete slabs and enables natural ventilation.

<https://www.dezeen.com/2015/06/02/iwamotoscott-leong-leong-wrap-miami-parking-garage-perforated-screens/>



**ART DECO DESIGN SAMPLE -- MIAMI BEACH, FLORIDA**



**I. ARCHITECTURE IMPACTS OUR MOOD & BUSINESS ACTIVITY:**

Winston Churchill once said,

*“We shape our buildings and afterward our buildings shape us.”*

The psychological impact of buildings on our mood and enjoyment of the spaces around us cannot be underestimated.

The ICAA has noted that:

*“studies have shown that **people tend to walk faster through dead spaces of ill-conceived architecture.** But **when there is “delight” with a beautiful building composition, people will slow their pace and feel a physical and emotional connection to their surroundings.**”*

In downtown Manhattan, a virtual reality experiment that measured participants’ physiological responses while viewing street scenes using wearable devices. The results showed that

*“street scenes with the most **architectural variation** the most mentally engaging.”*

Another VR study showed that

*“most people feel better in rooms with **curved edges** and **rounded contours** than in sharp edged rectangular rooms – though (tellingly perhaps) the design students among the participants preferred the opposite.”*

- **Relevant Ground Level Retail**

- Bike Shop
- Grab & Go
- Informational Kiosk
- Ticket Booth – Cinema, Actor’s Playhouse

- **Height:**

- Permitted in Zoning Code
- Similar to Colonnade Garage & Less than Residential Condominiums in CBD

- **Aesthetic and Environmental Design Features Must be Incorporated**

## II. REFLECTIVE LIGHT & HEAT

➤ **Laws of Physics – Reflective Heat.** Reflected sunlight, whether refracted or concentrated, increases the temperature and heat retained by surrounding buildings and vehicles. Hotter streets:

- **Decrease foot traffic to businesses.**
- **Decrease Outdoor Dining.**
- **Impacts trees and plants.** UM Biology Professor Ken Feeley recently reported:

*In a comprehensive study of nearly 20,000 species, University research shows that plant communities are shifting to include more heat-loving species as a result of climate change.*

***Although Live Oak trees are common in South Florida today, Ken Feeley, a University of Miami biology professor, said **their time here may be fleeting. With climate change pushing up temperatures, the oaks, which favor cooler conditions, could soon decline in the region and be replaced with more tropical, heat-loving species such as Gumbo Limbo or Mahogany trees.*****

See <https://news.miami.edu/stories/2020/08/global-warming-is-changing-our-plant-communities.html>

➤ **Decreasing Heat with Architectural Design:**

**A. Cool Roofs Reflect Heat UP**

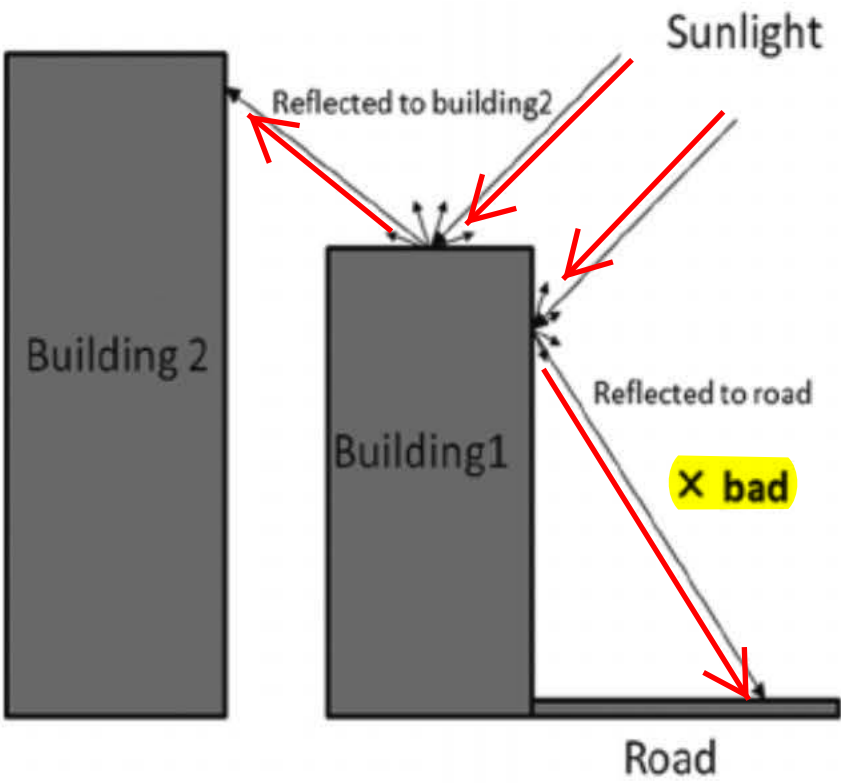
**B. Trees that provide Shade**

**C. Shading Architectural Features**

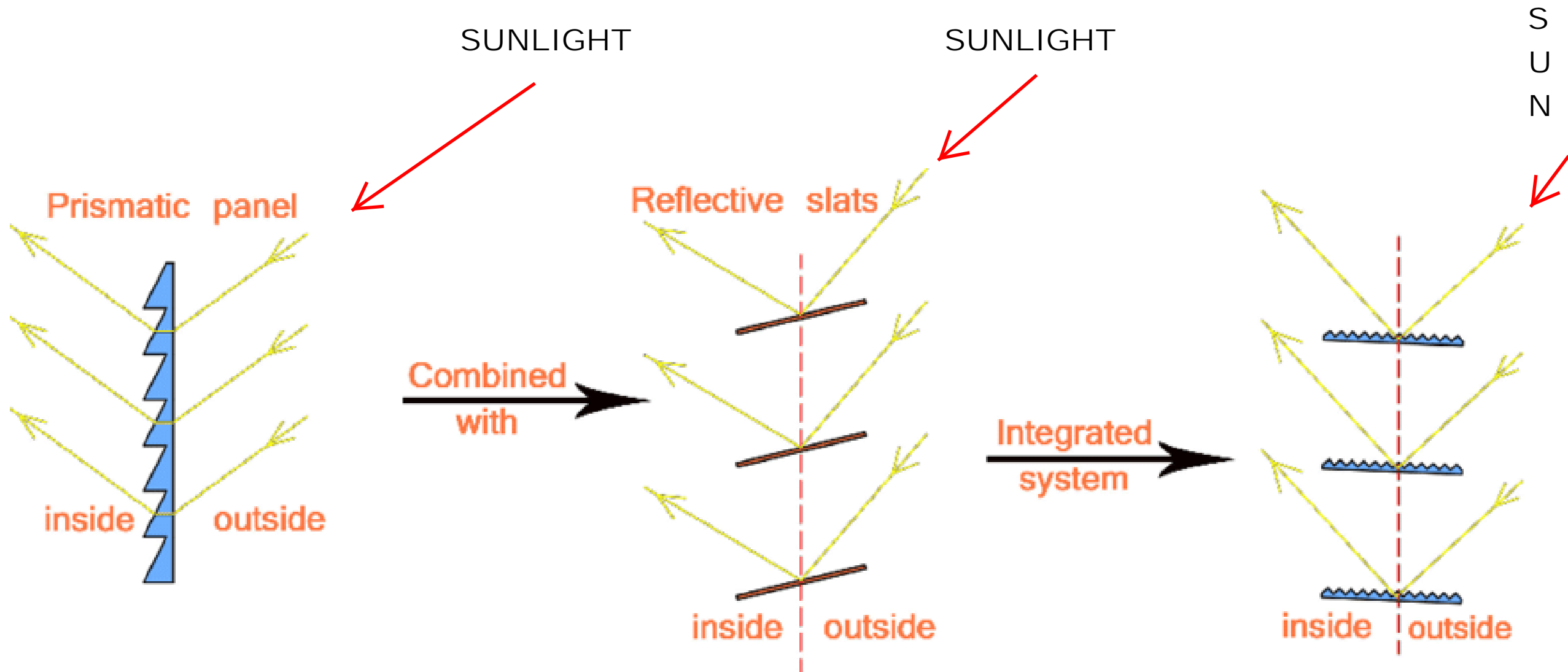
**1. Louvers that Reflect Light UP**

**2. Styles of Louvers:**

- **Horizontal** – reflect light UP and into the building
- **Angled** – reflect light up and into the building
- **Vertical** – which avoid reflection in hottest part of the day, and reflect light in before and after mid-day



# DIAGRAM OF LIGHT REFLECTION ON LOUVERS





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Not to Scale

Louvers  
Angled  
Straight

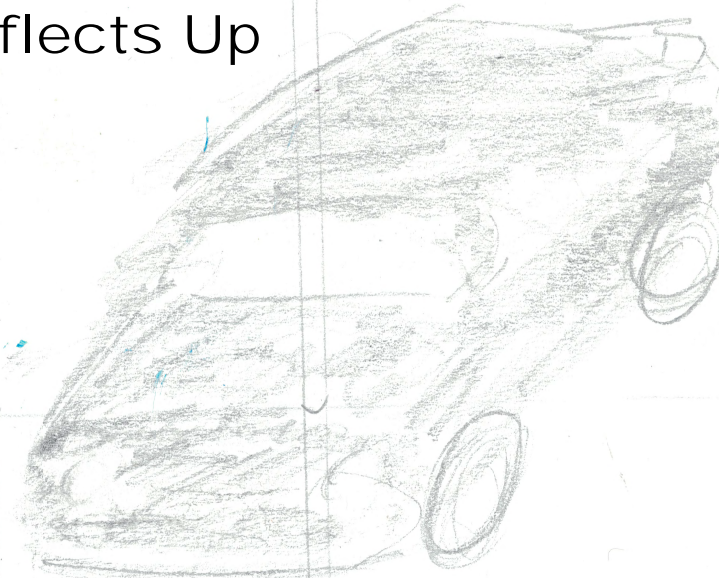
Louvers  
Angled  
Up w/  
Screen  
Behind

Sun Reflects Inside,  
Light Reflects Up  
Outside

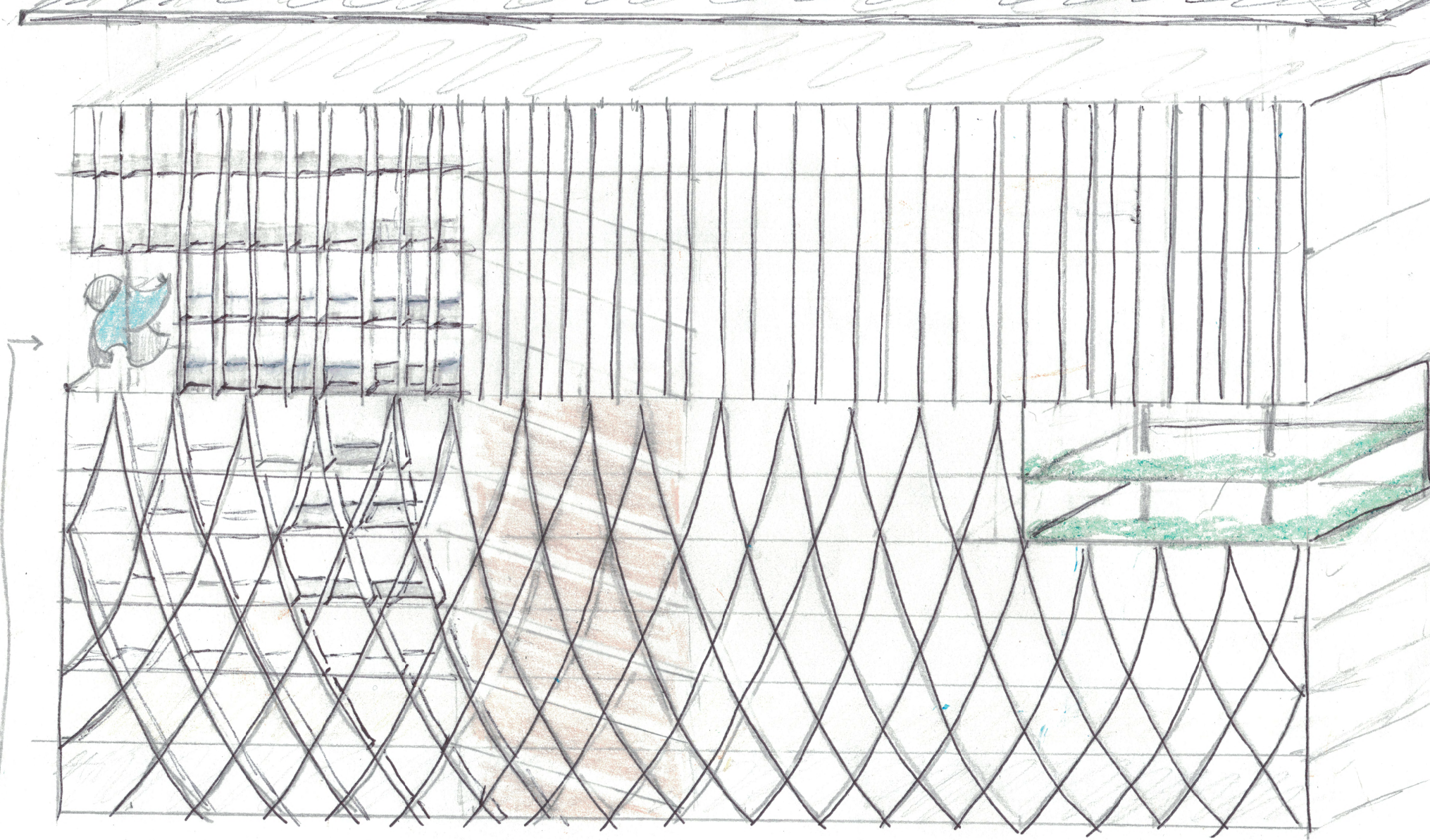
Parking  
Deck

Sun Reflects Down

Indoor Light Reflects Up



Angle Up  
w/ screen

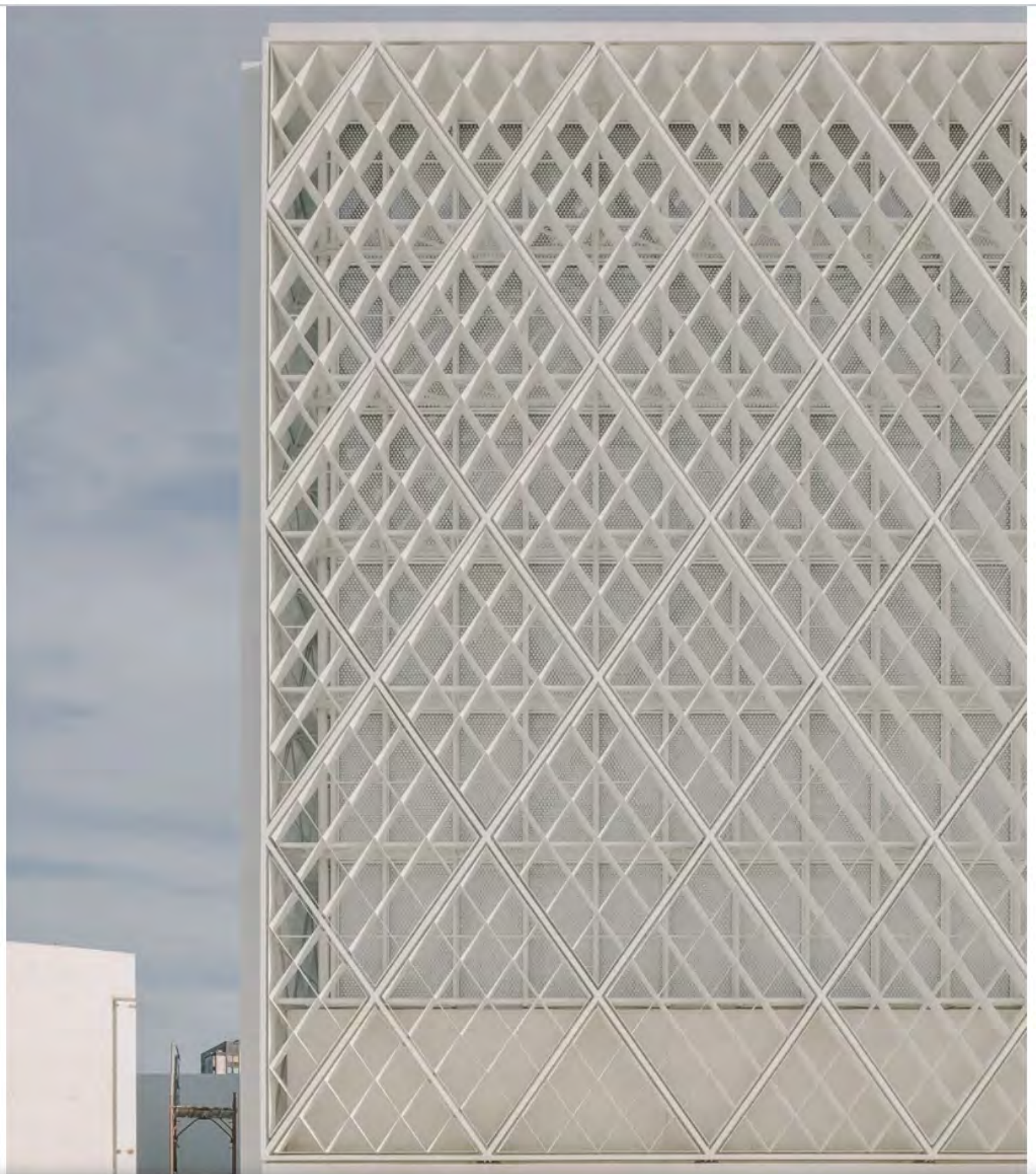


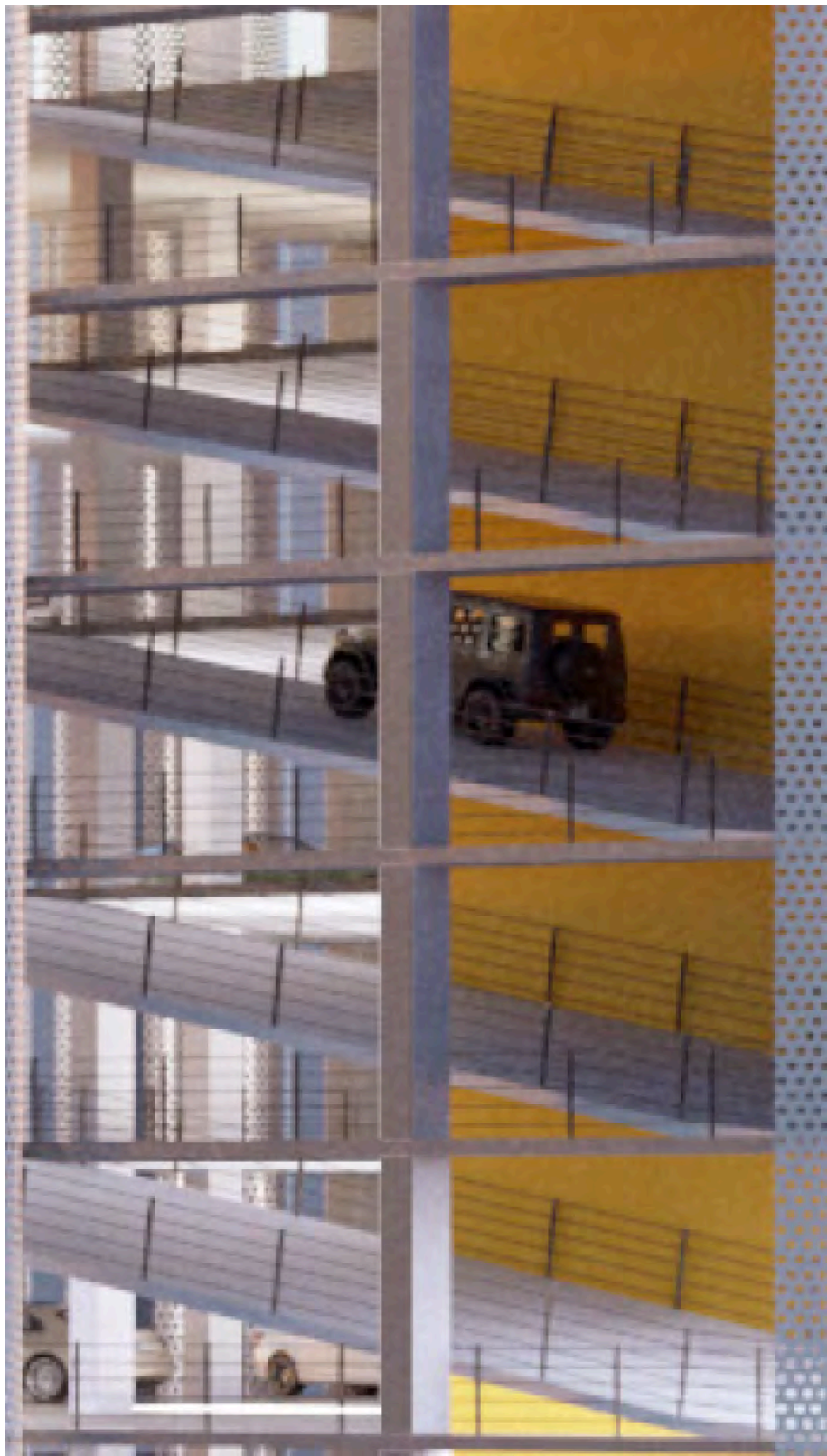
Wind Turbine : Alternative Styles:















SCREEN

HEADLIGHTS FROM

ROOFTOP DINING &  
RESIDENTS

ZONING CODE

SEC. 10-105 REQUIRES

## ZONING CODE SECTION 10-105(C):

### C. Parking garage exterior design.

1. The exterior façades of parking garages shall be designed and improved so that the use of the building for parking is not readily apparent and shall reflect the architectural character and exterior finishes of the principal building that is to be served.
2. Parking garage openings shall be screened from surrounding properties and rights-of-way to minimize visible interior lights and car headlights.
3. Pipes, conduits, and mechanical systems attached to a garage ceiling shall not be visible from any sidewalk and concealed with decorative screening, as approved by the Board of Architects.

**From:** [Ramos, Miriam](#)  
**To:** [Anderson, Rhonda](#)  
**Subject:** RE: Question regarding Ordinance No. 2019-13 and Zoning Code Section 10-105  
**Date:** Friday, November 5, 2021 11:25:30 AM  
**Attachments:** [image002.png](#)

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Hello Commissioner,

As discussed this morning, the provision allows the City Commission to disregard any section of the Zoning Code that it finds, in its discretion, serves the public interest. That certainly does not mean that the City Commission *must* disregard a particular provision; only that it is allowed to do so, should the equities weigh in favor of doing so.

Thank you,

*Miriam Soler Ramos, Esq., B.C.S.*

**City Attorney**

*Board Certified by the Florida Bar in City, County, and Local Government Law*

City of Coral Gables

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**From:** Anderson, Rhonda <[randerson@coralgables.com](mailto:randerson@coralgables.com)>

**Sent:** Friday, November 5, 2021 8:26 AM

**To:** Ramos, Miriam <[mramos@coralgables.com](mailto:mramos@coralgables.com)>

**Subject:** Question regarding Ordinance No. 2019-13 and Zoning Code Section 10-105

Good morning Miriam. I understand that Ordinance No. 2019-13 exempts City buildings from the zoning code procedures and without reference to zoning use or classification. Does that provision also allow the Commission flexibility to not comply with building design standards? More specifically, may the Commission design a parking structure that does not comply with ZC Section 10-105?

Thank you,

Rhonda



**COMMISSIONER RHONDA ANDERSON**

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# Why isn't everyone afraid of heights?

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Suffering from a little vertigo? While you might not have full-blown acrophobia, you might still suffer from height intolerance.

By [Christian Jarrett](#)



When we're up high, the lack of nearby visual anchors makes our bodies sway automatically – this contributes to the dizzying sensation of vertigo. But most people aren't afraid of heights, not in the sense of having 'acrophobia', which is when the mere thought of falling can bring on a panic attack. The rest of us are either height intolerant, height tolerant or height enjoying. Members of the last group have got used to, or even find pleasure in, the sensations brought on by heights, and many also get a thrill from the associated risks.

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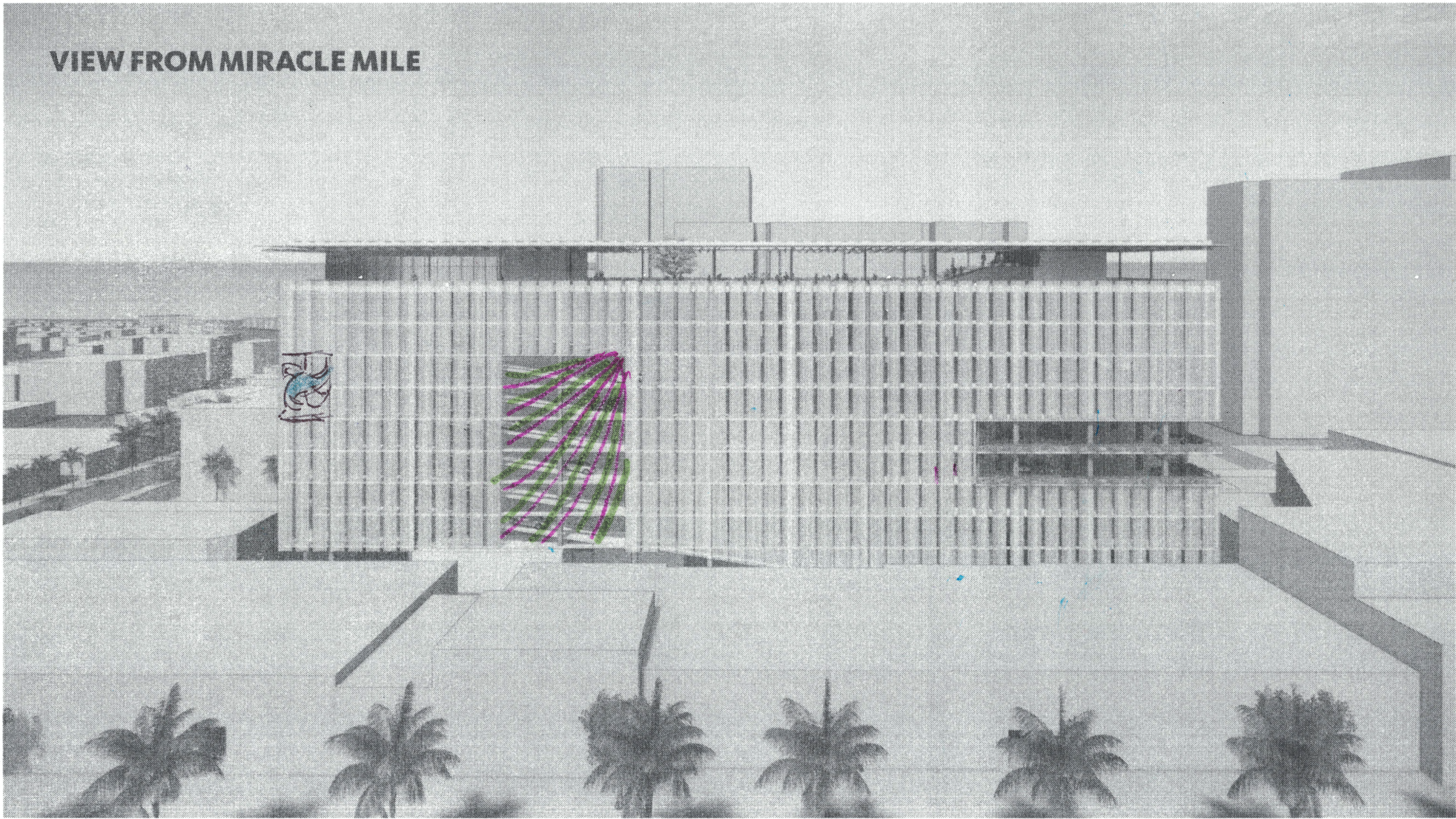


**[Christian Jarrett](#)**



Dr Christian Jarrett is a cognitive neuroscientist, science writer and author. He is the Deputy Editor of *Psyche*, the sister magazine to *Aeon* that illuminates the human condition through psychology, philosophy and the arts. Jarrett also created the British Psychological Society's Research Digest blog and was the first ever staff journalist on the Society's magazine, *The Psychologist*. He is author of *Great Myths of The Brain* and *Be Who You Want: Unlocking the Science of Personality Change*.

**VIEW FROM MIRACLE MILE**



# Who, what, why: How does a skyscraper melt a car?

3 September 2013



The BBC's Andrew Verity surveys the damage caused by the skyscraper

**A London skyscraper dubbed the Walkie-Talkie has been blamed for reflecting light which melted parts of a car parked on a nearby street. What happened?**

It's like starting a fire with a parabolic mirror.



"Fundamentally it's reflection. If a building creates enough of a curve with a series of flat windows, which act like mirrors, the reflections all converge at one point, focusing and concentrating the light," says Chris Shepherd, from the Institute of Physics.

The half-finished 37-storey "Walkie Talkie"- nicknamed such because of its tapering rectangular design - is indeed a curvy building. Its design, which has also been compared to a brimming pint glass, has **provoked controversy before**.

It transpires the car, a Jaguar on Eastcheap in the City of London, was parked at **just the spot where the focused light landed**.



| The "hot spot" on Eastcheap, in London

The car wasn't the only casualty. There have also been reports of a smouldering bicycle seat, singed fabric and blistered paintwork.

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Land Securities, which is developing the tower with the Canary Wharf Group, says it is working on a solution and has taken the emergency measure of suspending the parking bays beneath the glare.

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They have described the problem as a phenomenon caused by the current elevation of the sun in the sky. It is thought it can last for two hours a day and might only be a problem for the next two or three weeks.

But how common is it for skyscrapers to damage cars or property in this way?

Architectural critic Jonathan Glancey says the story is not unprecedented.

In 2003, the opening of the Walt Disney Concert Hall in Los Angeles, designed by architect Frank Gehry, hit a similar stumbling block.

"The building was clad from head to toe, right down to the pavement, in stainless steel panels, and they would send the sun dazzling across the sidewalks to hotspots where people were. It was measured up to 60C (140F).

"Local people living there complained they were having to crank their air conditioning up to maximum to cool things down," he says.

Blinding glare also affected drivers passing the building.

After computer models and sensor equipment identified the panels causing the problem, they were sanded down to break up the sun's rays.

There are also plenty of lesser-known, smaller scale sun traps caused by architecture, according to Shepherd.

"The Eden shopping centre in High Wycombe has a shop with a series of windows in a curve that all happen to concentrate the light at one point. If you walk across that point you can feel some warmth," he says.

There are also those caused by design, rather than accident.

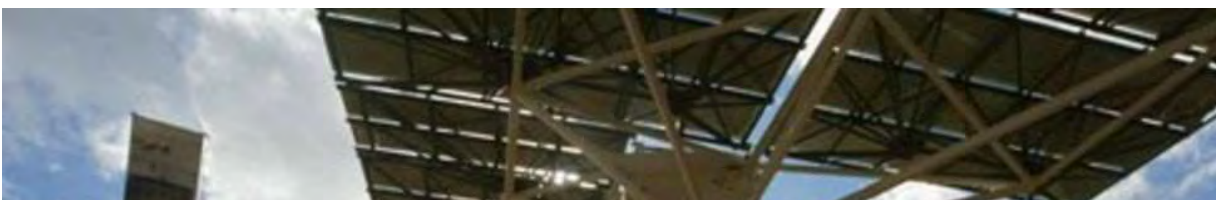
Solar furnaces, the largest of which is in Odeillo in France, use mirrors to gather sunlight and create high temperatures, usually for industry.

The temperature at focal points can reach 3,500C (6,330F), with the heat used for testing various materials, generating electricity and the design of solar plants.

Shepherd says the same principle is also used in reflecting telescopes. A curved mirror collects the light and reflects it to a focus.

"It has to be perfectly curved to get a clear picture - if not you get hazy blob concentrations," he says.

The physics is the same for sound as for light, he adds. "The curved mirror effect can be used to focus sounds - or the reverse, if a speaker stands at one end of an amphitheatre, and wants to project to an audience."





| Solar furnace in the French Pyrenees

When it comes to the skyscraper and the car, Shepherd says the fact the car was black - a good absorber of light - would have had an impact on the damage caused by the concentrated heat.

He says the only parts that seem to have suffered are plastic, which is significant, as plastics generally have a much lower melting point than the steel of the car body.

Some plastics such as PVC - polyvinyl chloride - can melt at 100C, but they can soften before that. One reading taken today suggested the hotspot was 91.3C.

As for the Walkie-Talkie, Shepherd thinks the developers could employ a number of possible solutions.

"They could coat the windows to reduce reflection - which would be a cheap fix - but the downside of that is it could reduce the light entering the building.

"Another solution would be for them to misalign the window frames, to slightly alter them by about a millimetre, but that would be very expensive," he says.

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