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# #UrbanDataCanvas

## Hackathon

# February 22, 2014

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swissnex, GrayArea.org, Arup, BCNM  
with case studies by Casey Reas

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**Wifi: swissnex SF 1st Floor  
PW: Helvetica1291**

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# Urban Data Challenge

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- Open Data
- Urban Problems
- Global View
- Citizen Engagement
- Creative Input
- Innovative Solutions

# 2013: Concept

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San Francisco

Zurich

Geneva

FORMAT:  
online  
challenge

THEME:  
public  
transportation

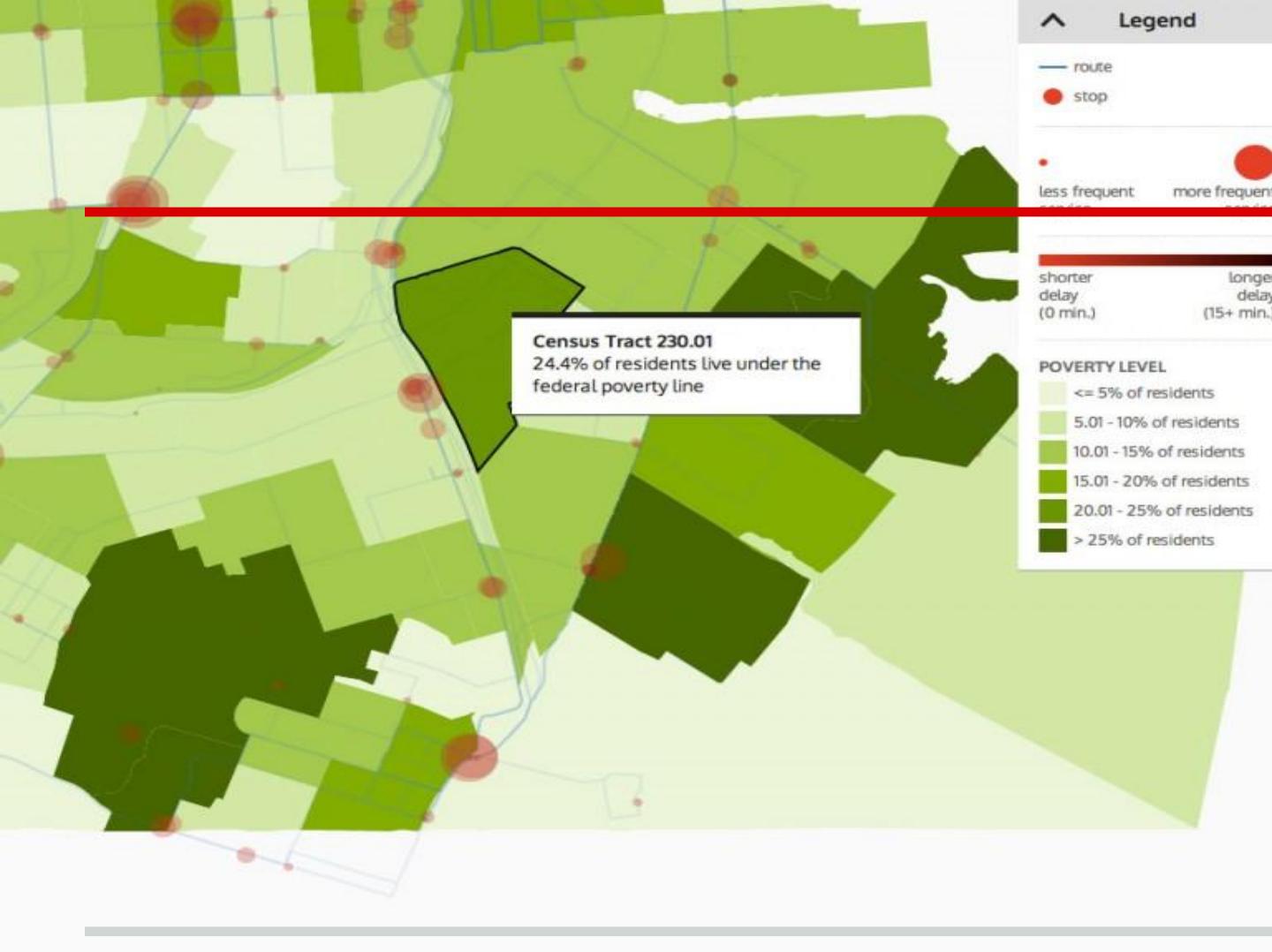


# 2013: Outcomes

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- 1 week public transportation data
- 1 month global online challenge
- Events in all three cities
- over 400 subscriptions
- 86 participants
- 23 visualizations
- City-level engagement
- over 100 press mentions
- ... and a lot of enthusiasm for 2014

# San Francisco



## Economic Data

### POVERTY LEVEL

### Routes

1	1X - 31X - 38X	2 - 3 - 4
5	6	8X
12	16X	19
28	14	14X/L
17	18	21
22	23	24
27	28	29
30	30X	31
33	35	36
37	38	39
41	43	44

# FRUSTRATION index

\* about

07 : 30 : 00

San Francisco

Monday, October 1st, 2012



Speed



Capacity



Delay



**what is riding 19 like at  
09:33 pm on a Monday**

# Monday CONNEX



# More Impact in 2014

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- global online challenge
- out of the box thinking
- real-time datasets
- more open data
- public engagement
- public data display



ARUP

SEARCH BY Neighborhood

Find Your Dream Apartment or Home

### CRAIGSLIST RENTAL LISTINGS in San Francisco

The most comprehensive apartments for rent are on Craigslist. Search by neighborhood or location to find your dream home.

WEARHOUSE  
WEARHOUSE.COM

FRASER



**ART WORKS.**

**National  
Endowment  
for the Arts**  
[arts.gov](http://arts.gov)





E DELIVERY 447-5847

FOUNDATION  
FOR THE ARTS









REAL TIME DATA VISUALIZATION  
TO ACTIVATE THE PUBLIC REALM

# PAVEMENT TO PARKS

SAN FRANCISCO

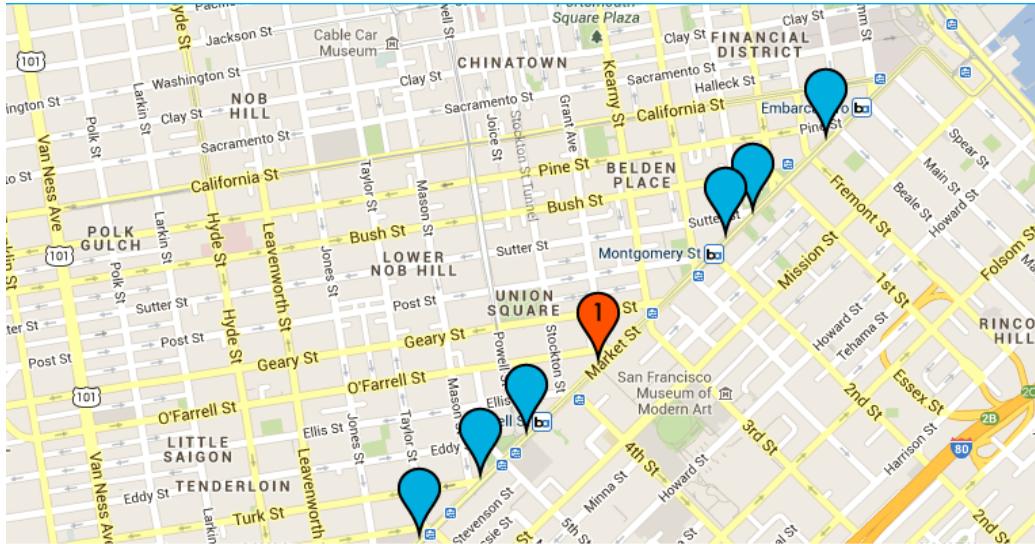


exploring how design, art,  
and technology can serve  
as tools for civic  
participation

# LIVING INNOVATION ZONES

SAME STREETS | DIFFERENT IDEAS

## SF Planning dept sites:



### Our site goals:

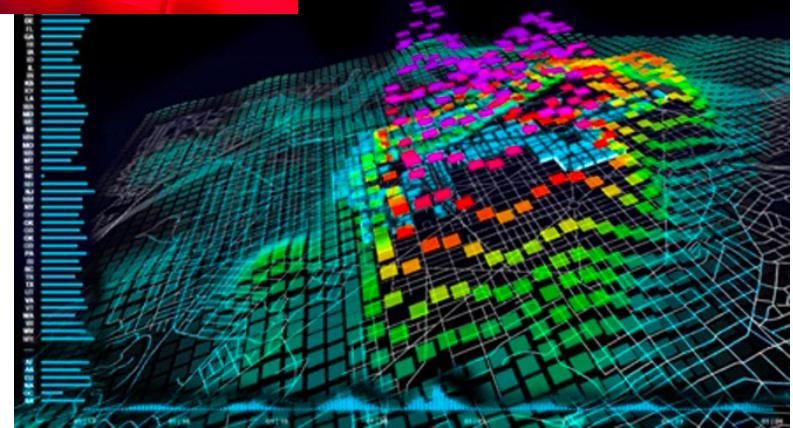
- Active, lively location
- A place where people will pause to experience the Canvas

[experience fuels  
imagination, supports  
reasoning and action]

Social Furniture +

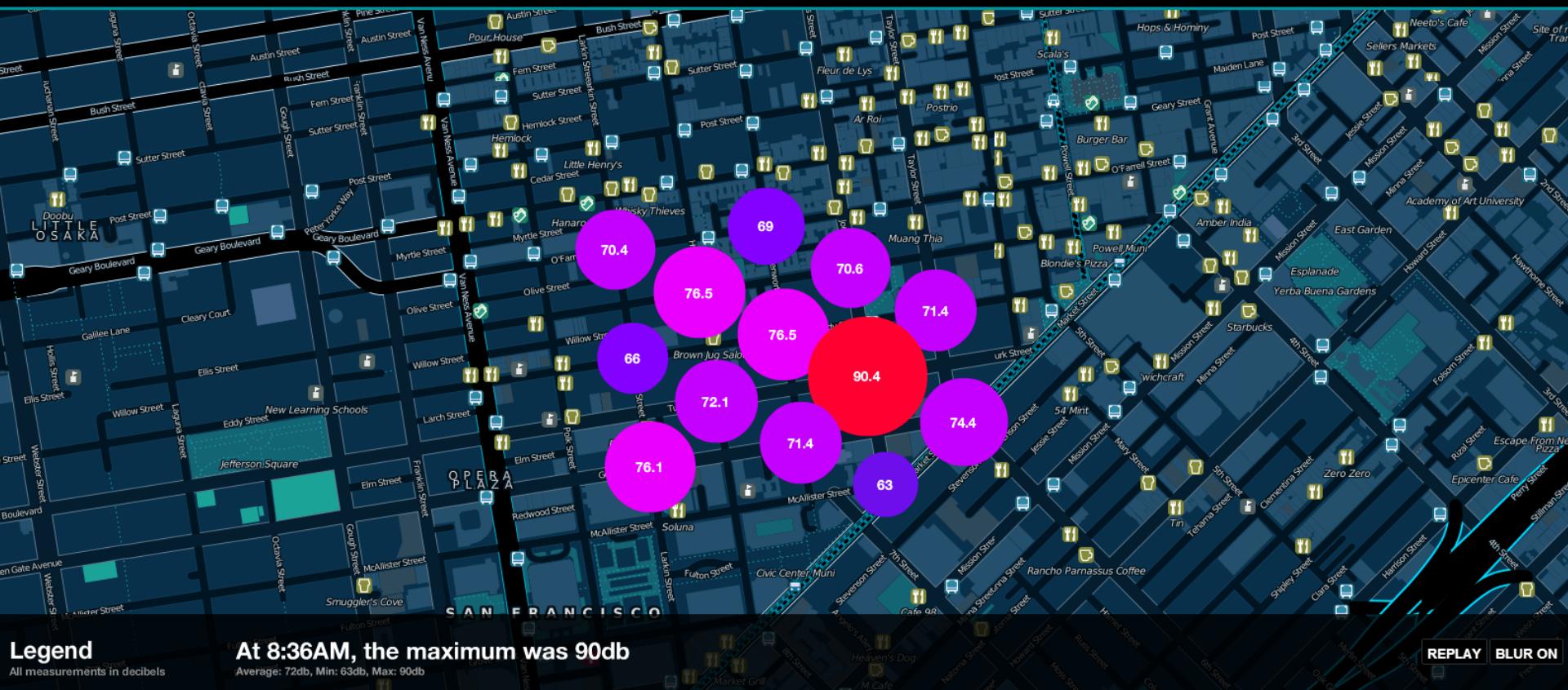


Dynamic theatrical  
experience +



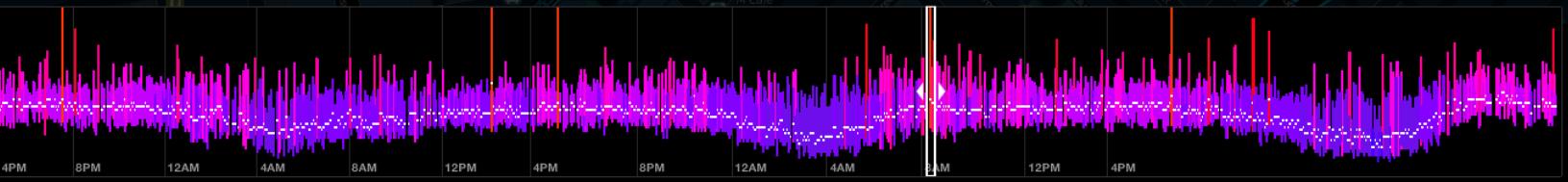
Your amazing data vis =

Our Living Innovation Zone

**Legend**

All measurements in decibels

- 120 Threshold of Pain
- 110 SFPD Sirens
- 100 Inside a Nightclub
- 90 Heavy Trucks
- 80 Limit for Construction Noise
- 70 Raised Human Voices
- 60 Serious Annoyance
- 50 Sleep Disturbance
- 40 Quiet





*Sent Forth* by Arup + Jefferson Mack Metal



# Team Considerations

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Audience

Experience

Platform

Partners



high  
solar  
potential  
low

In an energy-scarce world,  
New York City can draw from  
an abundant source of power:  
the sun.

The challenge: most solar  
energy goes unused.

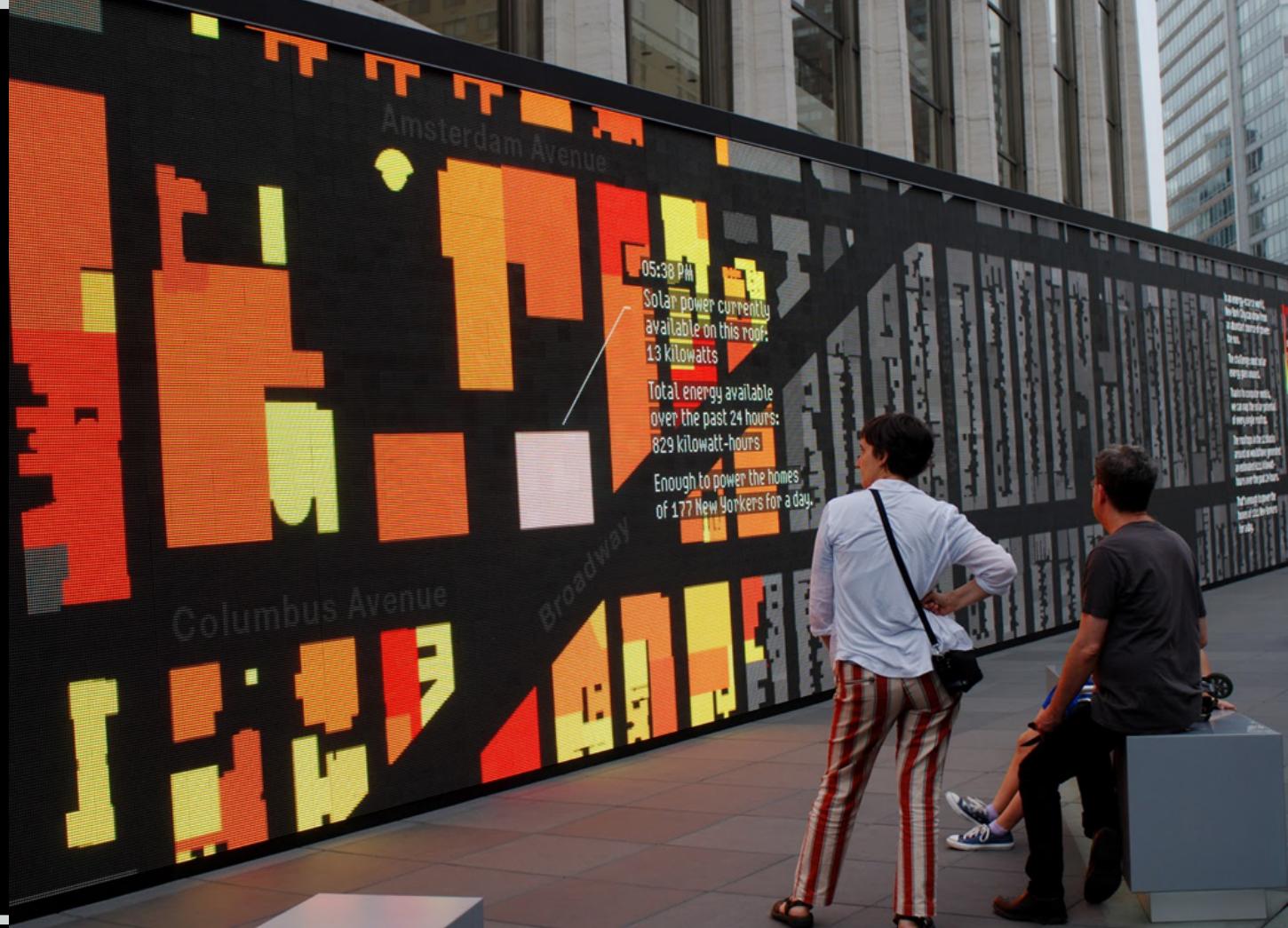
Thanks to computer models,  
we can map the solar potential  
of every single rooftop.

The rooftops in the 12 blocks  
around us would have generated

an estimated 11031 kilowatt-  
hours over the past 24 hours.

That's enough to power the  
homes of 2380 New Yorkers  
for a day.



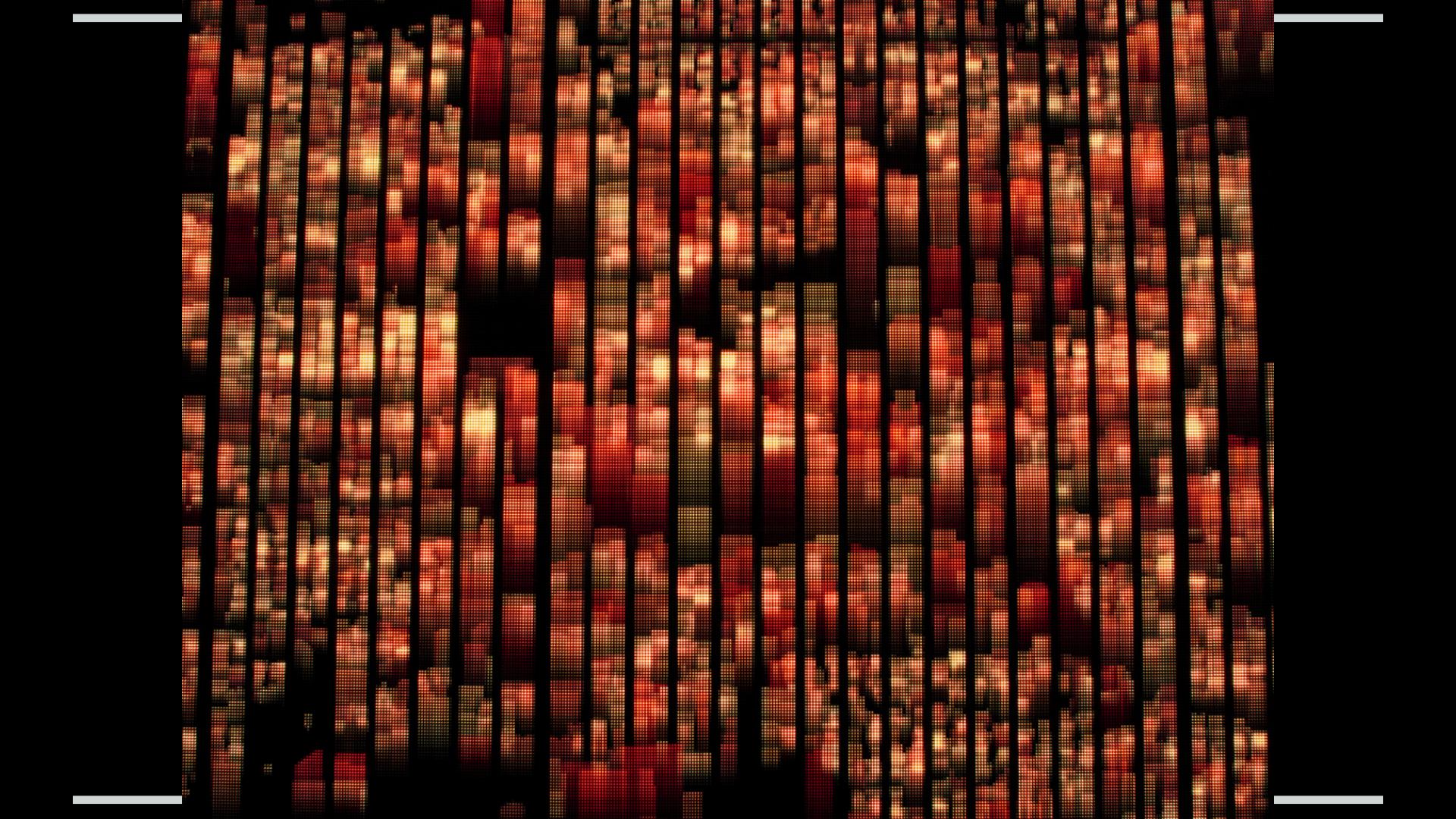


06:37 PM

Solar power currently  
available on this roof:  
5 kilowatts

Total energy available  
over the past 24 hours:  
1465 kilowatt-hours

Enough to power the homes  
of 314 New Yorkers for a day.









Each year in New York City,  
PM2.5 pollution – fine  
particulate matter pollution –  
causes more than 3,000  
deaths.

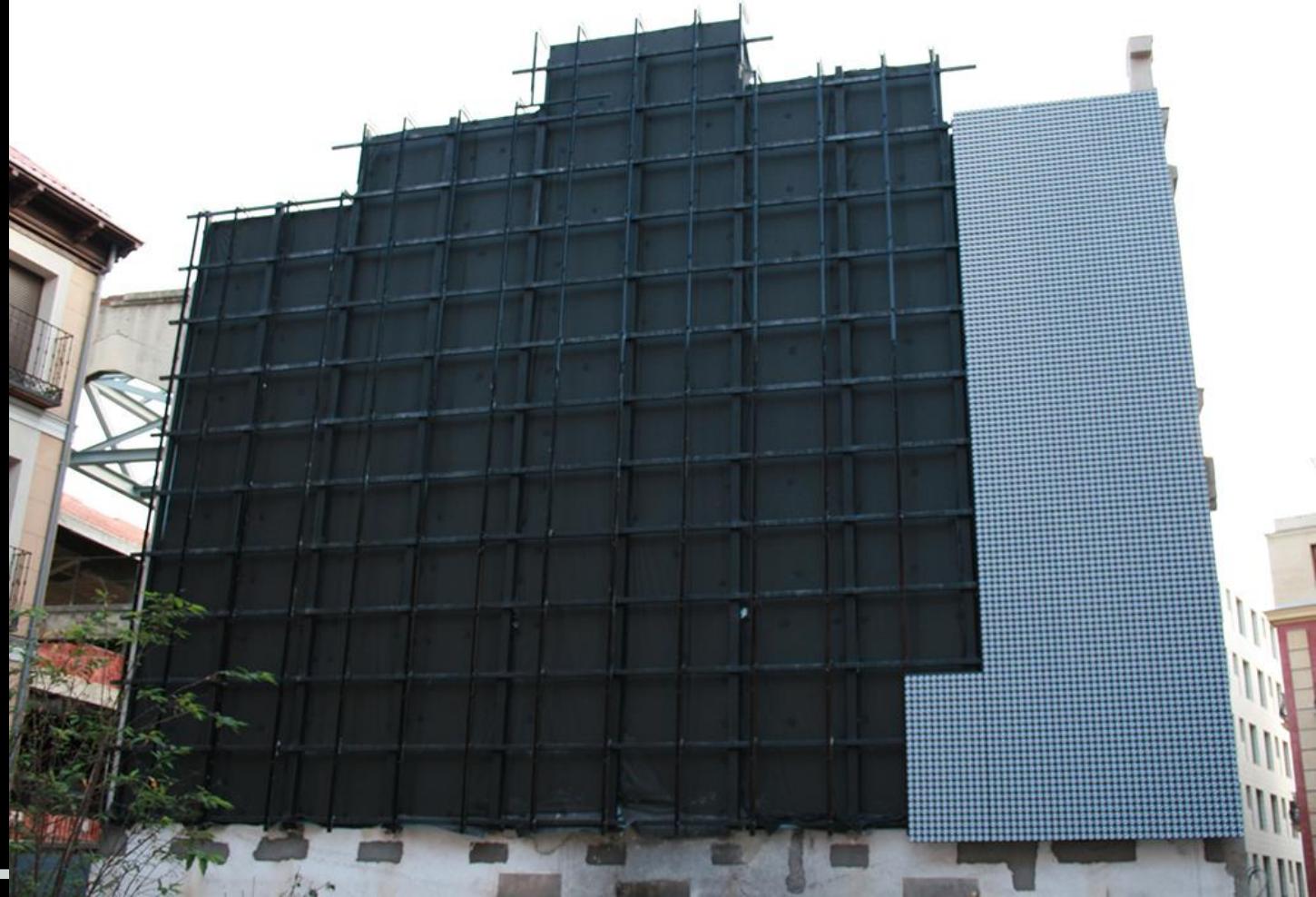
New York City is pulsing  
with commerce.

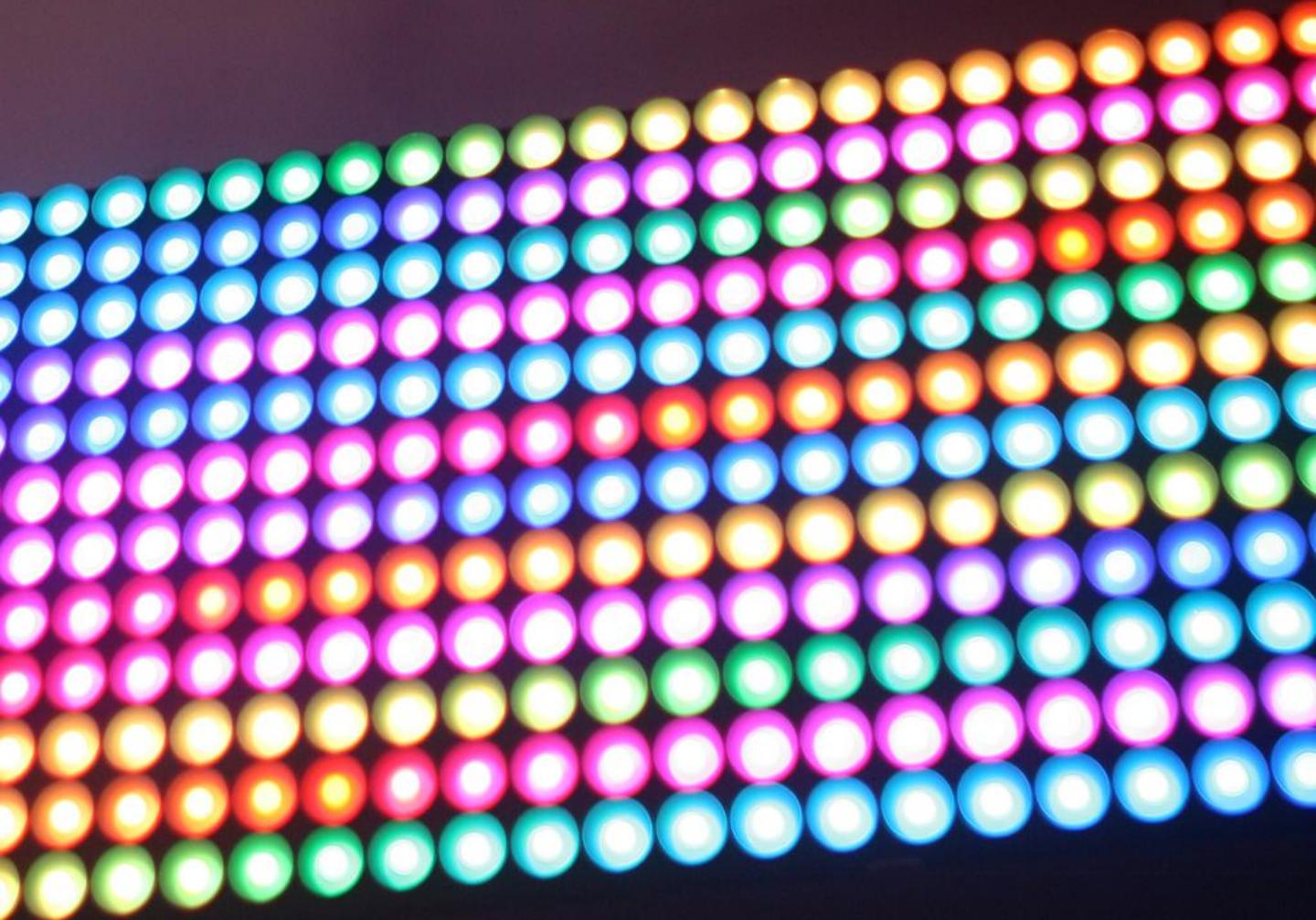
Today alone there will be  
an estimated 3 million  
debit and credit card  
transactions in the city.

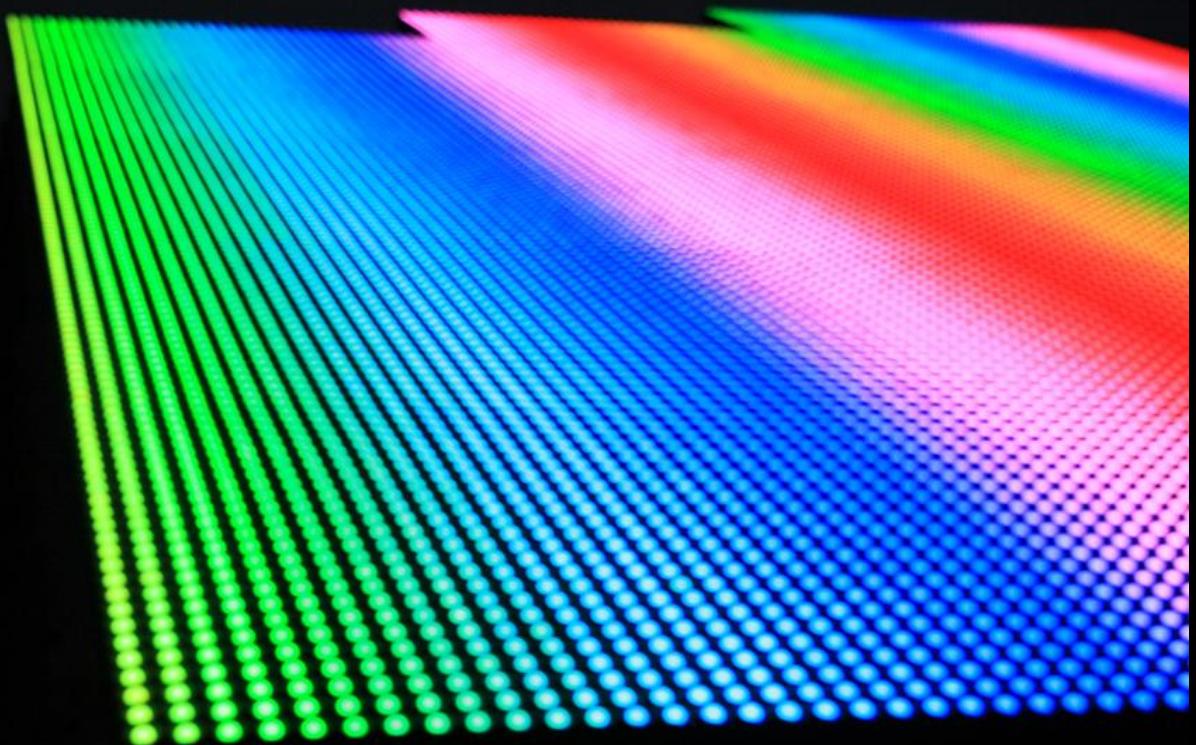
Not all, however, will  
be authentic.

Financial institutions  
are increasingly vigorous in  
their effort to fight fraud.

Thanks to advanced analytics,  
identity theft can be detected  
more easily, helping some  
financial institutions reduce  
fraud by as much as 40%.

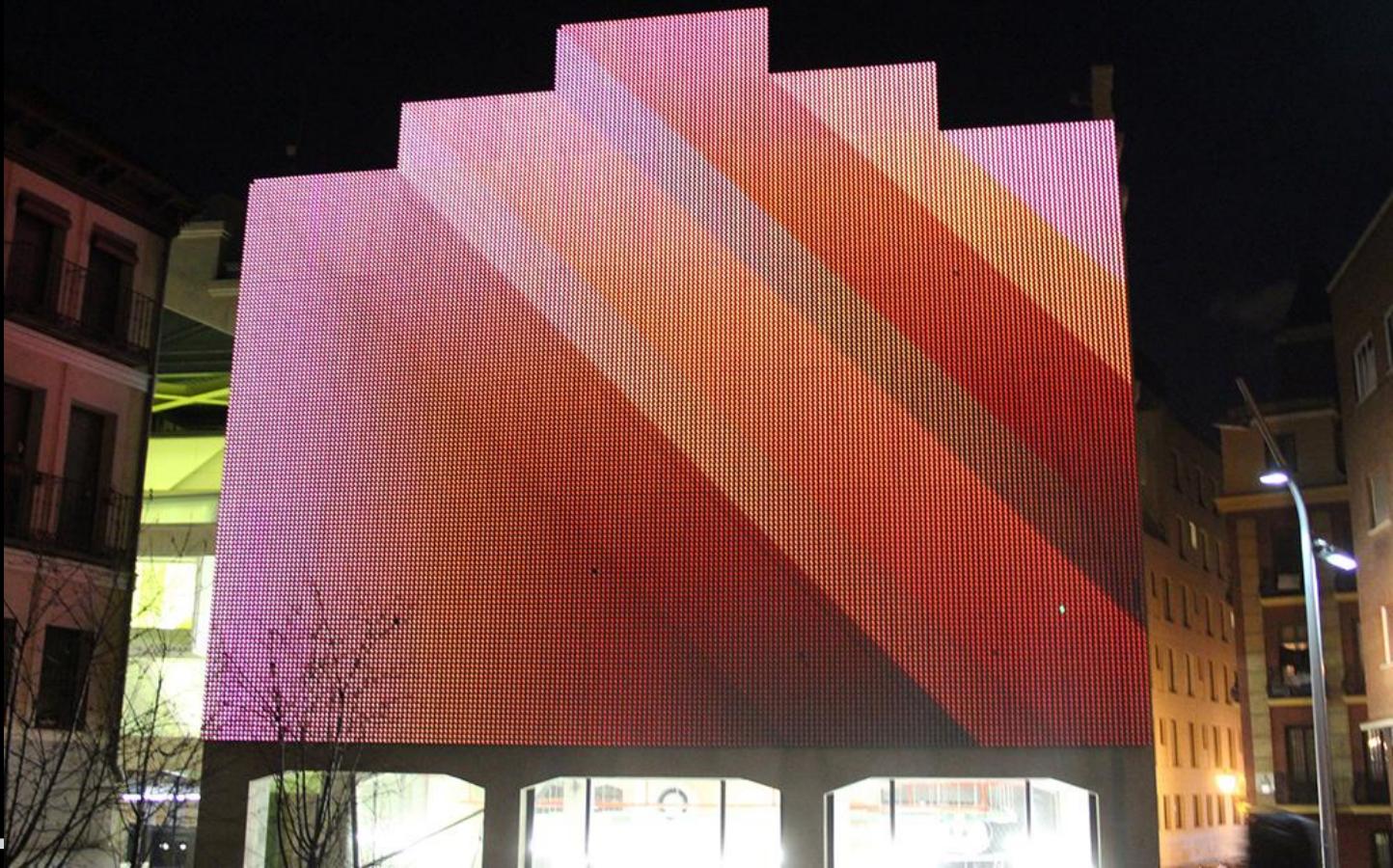


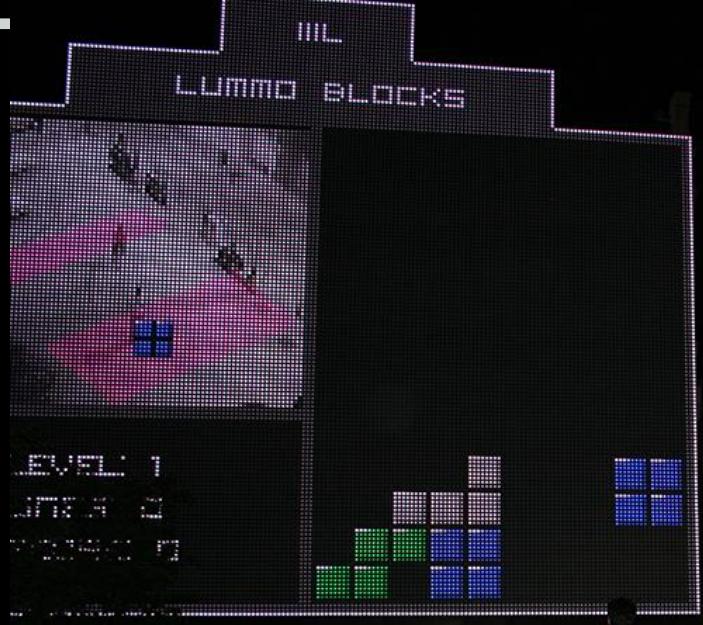












# Urban Corridor



# Hypothesis

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1. A corridor provides an effective structure for sampling urban data.
2. Hyperlocal urban data visualization can inspire regulating feedback loops for citizens to optimize the urban metabolism.
3. We can see things coming and take action in due time.

# Data Model

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## 4 modalities

- pedestrians
- cars
- trucks
- buses

## 4 locations

- Embarcadero
- Montgomery
- Powell
- Civic Center
- Distance 0.5 mi.

## 2 weeks

- 14 days
- 336 hours
- 20160 min.
- 322560 numbers
- from Jan 20, 2014 00:00 to Feb 2, 23:59 HRS

# Data Visualization Parameters

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- sites of measurements match sites of displays
- resolution: full screen 1920 by 1080
- online and mobile versions possible
- visualizations and sonifications of any kind are welcome
- processing.org recommended
- touchscreen and mouse interactivity ok
- adding data, text or images is ok
- upload a project folder with distinctive name, source and “export” executable with stop button, for Mac OSX
- we assume all work is CC Attribution-NonCommercial 4.0 International

# Data Format

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string 2014-01-25 13:17:00-08:00	string Embarcadero	string Pedestrians	int 17
2014-01-25 13:18:00-08:00	Embarcadero	Buses	1
2014-01-25 13:18:00-08:00	Embarcadero	Cars	5
2014-01-25 13:18:00-08:00	Embarcadero	Trucks	1

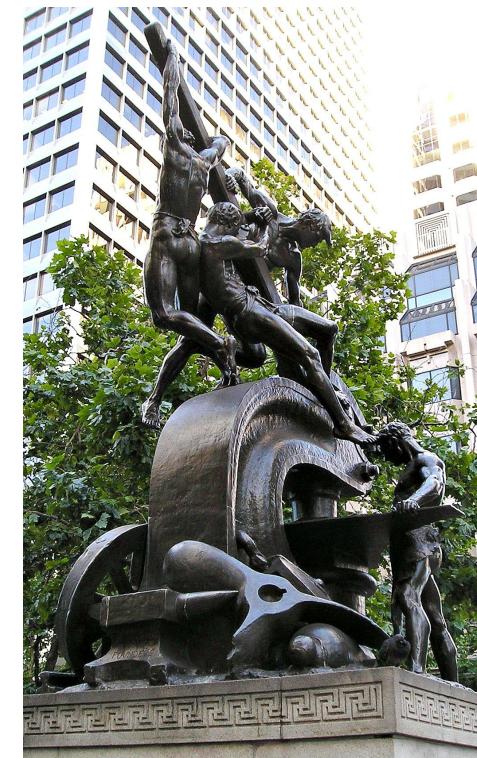
# processing: parse Table

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```
Table table;
int counter;

void setup() {
    size(1920, 1080);
    table = loadTable("urban_data.csv", "header");
    println(table.getRowCount() + " total rows in table");

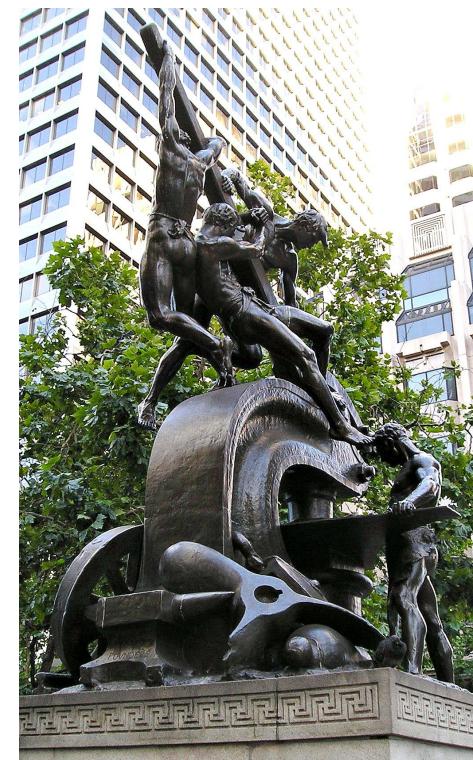
    for (TableRow row : table.rows()) {
        String time = row.getString("Timestamp");
        String station = row.getString("Station");
        String object = row.getString("Object");
        int count = row.getInt("Count");
        //println(time, station, object, count);
    }
}
```



# processing: Parse timestamp

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```
String timeStamp = "2014-01-27 15:46:00-08:00";  
  
// Separate at space, dash, OR colon  
int[] dateTime = int(splitTokens(timeStamp, "- :"));  
  
int year = dateTime[0];  
int month = dateTime[1];  
int day = dateTime[2];  
  
println(year, month, day);  
  
int hour = dateTime[3];  
int minute = dateTime[4];  
int second = dateTime[5];  
  
println(hour, minute, second);
```



# Data Challenge Format

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## Round 1

- laptops shut at 6:30 PM
- 8 jury members
- 10 finalists
- 60 minutes

## Round 1 Show

- 10 finalists
- 3 min. team presentations
- 40 minutes

## Round 2

- 1st Prize: \$500 from BCNM
- 2nd Prize
- 3rd Prize
- Audience Award
- Jury will issue recommendation for data canvas production by March 1
- 20 minutes

# **Upload Your Project Here by 6:30PM**

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**<http://bit.ly/submitUDC>**