Translating Smart City Manager Knowledge

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How will 5G benefit the smart city vision?

$160 billion in benefits and savings in energy

Energy and Utilities

Water Pipes leaks and sewers 1

Smart Lighting 1

- Save power
- Reduce pollution
- Keep people safe

Smart Grids

- Economies of scale
- Automated real-time grid switching

Smart Traffic 3

- Autonomous vehicles
- Vehicle Platooning
- Road Safety
- Smart Parking
- On-vehicle communication

Mobility and Transport

Smart Parking 1

Security

Surveillance Cams

Drones 2

Broadband Video

Sustainability

Air Quality Sensors 1

How will 5G be used?

1. Massive Internet of Things **MIoT**
2. Enhanced Mobile Broadband **EMBB**
3. Mission Critical Services **MCS**

IOT

5G capacity increases with densification

Cities play a critical role for Small Cell deployment in Mobile Network Densification.

Tomorrow's wireless networks will require hundreds, or even thousands, of small cells densely deployed across cities.

Each Small Cell
traffic of 20 Gbps
1 M cells / km2
150 Mhz at 3.5Ghz

small cells

The full promise of Smart Cities and 5G requires a robust deployment of small cells

Low latency **<10 ms**

Low latency, more adaptive response times that support time sensitive applications, such as autonomous vehicle communication.

SMART**CITY**
EXPO WORLD CONGRESS

Sources:
https://www.cta.org/docs/default-source/default-document-li
brary/how-5g-can-help-municipalities-become-vibrant-smart-cities
-accenture.pdf
https://www.ihs.com/info/0217/5g-technology-global-economy.html
https://ce.com.hk/concern/5g-building-blocks-successful-smart-cities

Common Vision

Broad Street Plaza - ATL City Planning

Meet the Smart City Advisory Board

Colorado Smart Cities Alliance

Smart cities are collaborative problem-solvers. They weigh the risk of inaction heavier than the risk of trying something new, and they would rather make a strategic mistake than be complacent with the status quo.

From the Internet of Things (IoT) to automation, cities are trying to harness a wave of new technologies to solve problems like transportation, housing, public health and water differently. Unfortunately, many of these problems do not contain themselves to city boundaries, and each problem is unique to the circumstances of the region.

The Colorado Smart Cities Alliance exists to help governments navigate the murky waters of technology, data and innovation through collective action. The Alliance aligns multiple cities around issues of shared interest and provides the forum for testing and developing new solutions in partnership with other sectors. Through this purposeful network and innovative model for project development, the Alliance is tackling problems that no one city can solve on their own.

WHAT WE DO

Community Engagement

Invite more diverse thinkers, like architects and urban planners, into the process of imagining and designing the autonomous future: sociologists, fiction writers, Buddhist monks, poets and rabbis as useful stakeholders.

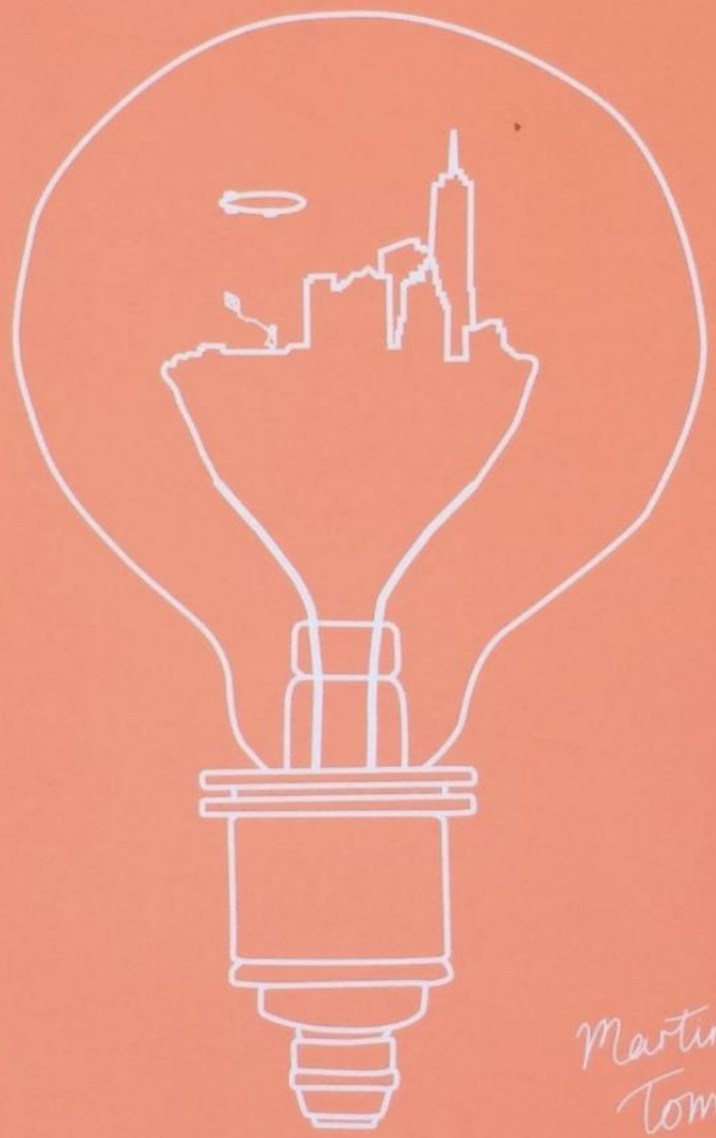
Marshall Brown, I.I.T. Urbanist

Community Engagement Tools

- Decidim Digital Platform for Citizen Participation
- Urban Logiq Data Analytics for Government
- PlaceSpeak
- illico Citizen Relationship Management
- Socrata Citizen Engagement Cloud
- Crowdgauge
- More than 50 other tools

MAKING CITIES SMARTER

Designing × Interactive × Urban × Applications



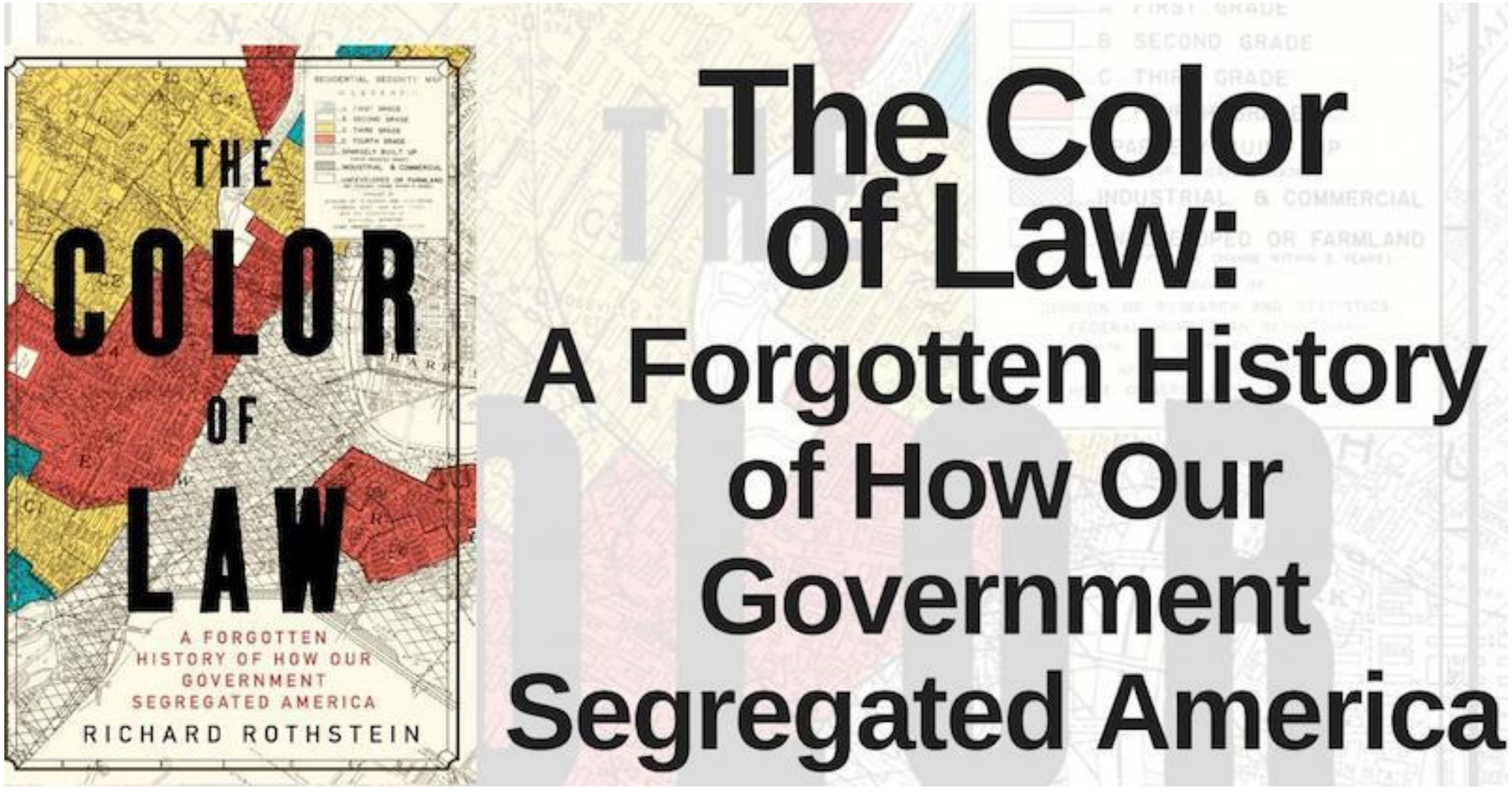
Martin Tomitsch

jovis

Launching the Sidewalk Toronto Project and a Robust Public Engagement Process

The Sidewalk Toronto project teams solicited a wide range of feedback from residents, researchers, community leaders, and government agencies across the city. This unprecedented level of preliminary public input — reaching more than 21,000 Torontonians in person to date — helped shape the plan.

Ethics


THE
COLOR
OF
LAW
A FORGOTTEN
HISTORY OF HOW OUR
GOVERNMENT
SEGREGATED AMERICA
RICHARD ROTHSTEIN
The Color of Law:
A Forgotten History of How Our Government Segregated America

LEGEND

A BEST
B STILL DESIRABLE
C DEFINITELY DECLINING
D HAZARDOUS
UNDEVELOPED
BUSINESS & INDUSTRIAL


TRT WORLD
成年人
男
成年人
女
成年人
男
成年人
男
成年人
女
成年人
男

NOBLE

ALGORITHMS OF OPPRESSION

HOW SEARCH ENGINES REINFORCE RACISM

NYU

AUTOMATING INEQUALITY

HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR

VIRGINIA EUBANKS

ST. MARTIN'S PRESS

TECHNICALLY WRONG

SEXIST APPS, BIASED ALGORITHMS, AND OTHER THREATS OF TOXIC TECH

SARA WACHTER-BOETTCHER

NORTON

MARIE HICKS

PROGRAMMED INEQUALITY

How Britain Discarded Women Technologists and Lost Its Edge in Computing

CATHY O'NEIL

WEAPONS OF MATH DESTRUCTION

CROWN

Forsythe

Studying Those Who Study Us

AN ANTHROPOLOGIST IN THE WORLD OF ARTIFICIAL INTELLIGENCE

Stanford

MAKE NEW HISTORY
2017 Chicago Architecture Biennial
Lars Müller Publishers
MAKE NEW HISTORY
2017 Chicago Architecture Biennial
Lars Müller Publishers
ARE WE ? HUMAN
Reinier de Graaf
Four Walls and a Roof
THE COMPLEX NATURE OF A SIMPLE PROFESSION
FORM FOLLOWS NATURE
PLATFORM 8
AN INDEX OF DESIGN & RESEARCH
Platform
Harvard University Graduate School of Design
Still Life
The Generic Sublime
Ciro Najle
LE CORBUSIER
PRECISIONS
ON THE PRESENT STATE OF ARCHITECTURE AND CITY PLANNING
FALLEN GLORY
JAMES CRAWFORD
Reinier de Graaf
Four Walls and a Roof
THE COMPLEX NATURE OF A SIMPLE PROFESSION
Centre Pompidou
THE INEVITABLE SPECIFICITY OF CITIES
THE NEW URBAN CRISIS
Effective Cycling
Forester
SELF-BUILD HOMES
SUBURBAN REMIX
IF MAYORS RULED THE WORLD
TOTAL LATIN AMERICAN ARCHITECTURE
DAVID RUSSELL
POST CITY
SUBURBAN CHURCH
MODERNISM IN POSTWAR AMERICA
SUBURBAN EURASIA
SYMBOLIZING EXISTENCE
BEYOND MOBILITY
THE WASTED CITY
THE SUSTAINABLE CITY
THE TAO OF ARCHITECTURE
CERVERO · GUERRA · AL
BEYOND MOBILITY
THE DIVIDED CITY
HOUSE IS A HOUSE IS A HOUSE
CONSUMING ARCHITECTURE
THE ART of the CITY
RAFFAELE MILANI
IMAGINARY CITIES
DARRAN ANDERSON
A Tour of DREAM CITIES NIGHTMARE CITIES and EVERYWHERE IN BETWEEN
Looking beyond the Icons
Learning from Logistics
MODERN COLISEUM
design for good
City of Refuge
The Continuous City
YOU SAY TO BRICK
ARCHITECTURE ACTIVISM
BECOMING JANE JACOBS
NEW TOWNS
AN INVESTIGATION ON URBANISM
EMPIRE, STATE & BUILDING.
WHY WE BUILD
ROWAN MOORE
Vanishing New York
How a Great City Lost Its Soul
Jeremiah Moss
Ethics of the Urban
THE NEW PIONEERS
JP FARBER
THE FUNCTION OF STYLE
ECOLOGICAL URBANISM
MAKING CITIES SMARTER
events: situating the hermanve
temporary eventarchi
METROPOLIS NOW!
THE SOCIAL IMPERATIVE
CHAIRS BY ARCHITECT
SCIENCE CITY
EASY ON, EASY
Can a City Be Sustainable?
Building the Ivory Tower
Adaptive REUSE
PARALLEL CITIES
CONSTRUCTED ECOSYSTEMS
HOMEWORK
IMMINENT COMMONS
DARK GHETTOS
SHELBY
REVOLTING NEW
DIY FURNITURE 2
RESPONSIVE LANDSCAPES
THINKING BIG DATA IN

Putting the Liberal Arts to Work in an Information Society

How can we collectively make good decisions about Smart City Projects?

The cost of sensors, algorithms, and databases steadily decline, giving cities new capabilities to address problems of energy use, traffic, pollution, crime, economic development, and social justice.

These capabilities often vary by neighborhood, so decisions about which areas gain resources and which neighborhoods are subject to intensified surveillance emerge, putting issues of equity and justice at the center of decision making.

These capabilities will also create new skills and new jobs, which also means new ways of life and new identities.

And because different groups in a city have different experiences, values, perspectives, and visions for the future, they have insights that ought to inform descision making beyond the perspective of technical experts.

We are creating this resource so that decision makers have a broader set of resources to draw upon to inform choices about Smart City projects. The liberal arts offers sophisticated frameworks for deliberating via a sophisticated form of rationality, representing identity in emotionally powerful ways, and assessing justice in a cosmoplitan world. We want to make this knowledge usable for Smart City decision makers.

This site offers three resources:

Smart City Projects

Smart City Ethical Principles

Smart City Experts

MICHIGAN STATE UNIVERSITY

CENTER FOR COMMUNITY AND ECONOMIC DEVELOPMENT

College of Arts & Letters

X experience architecture

Experience Architecture

quello center

MEDIA & INFORMATION POLICY

Huron-Manistee
National Forests

MICHIGAN

75

Muskegon

Grand Rapids

Flint

69

Holland

96

Lansing

96

75

69

Kalamazoo

Battle Creek

Ann Arbor

Detroit

Chat

Dearborn

94

275

Elkhart

uth Bend

Toledo

90


WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
WISCONSIN
MICHIGAN
OREGON
IDAHO
WYOMING
NEBRASKA
IOWA
ILLINOIS
NEVADA
UTAH
COLORADO
KANSAS
MISSOURI
INDIANA
OHIO
PENN
WEST VIRGINIA
KENTUCKY
VIRGINIA
MD
DE
NJ
NEW YORK
VT
NH
MA
CT
RI
MAINE
CALIFORNIA
ARIZONA
NEW MEXICO
OKLAHOMA
TEXAS
ARKANSAS
MISSISSIPPI
TENNESSEE
ALABAMA
LOUISIANA
GEORGIA
SOUTH CAROLINA
NORTH CAROLINA
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Philadelphia
Gulf of
Gulf of California

Photo Credits

- **Slide 2:** http://techtrendske.co.ke/smart-cities-global-summit-to-be-held-in-africa-in-june/
- **Slide 3:** https://twitter.com/SmartCityexpo/status/998564072453894146/photo/1
- **Slide 5:** https://en.wikipedia.org/wiki/Kilamba
- **Slide 6**: https://www.atlantaga.gov/home/showdocument?id=39623
- **Slide 7:** https://www.bizjournals.com/kansascity/news/2015/08/07/kcmo-smart-city-advisory-board.html
- **Slide 10:** https://www.freep.com/story/money/cars/2017/08/02/university-michigan-slams-brakes-hard-self-driving-vehicle-research/534000001/
- **Slide 14**: https://asuevents.asu.edu/content/special-talk-and-book-signing-richard-rothstein
- **Slide 15:** https://nextcity.org/daily/entry/minneapolis-mayor-unveils-plan-to-undo-history-of-segregation
- **Slide 16:** https://www.youtube.com/watch?reload=9&v=Doqg1eCQieo
- **Slide 17:** https://twitter.com/wellslucassanto/status/961837033458057216