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Making it happen – the transition to a sustainable society

What's stopping us from making the residential sector totally green?

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Outline of Presentation

1. The Sustainability Society Challenge: Where do we want to be in 50 years?
2. Our approach: If..., then....
3. Step 1: Defining and quantifying the vision, 50-100 years into the future
4. Step 2: Learning from the past
5. Step 3: Back casting
6. Step 4: Identifying major barriers to innovation and change: making the residential sector totally green

The Sustainable Society Challenge:

- Global warming and climate change will require drastic reduction of GHGs through –
 - Radically reducing our use of energy and materials
 - Deployment of alternative energy sources
- → Society/economy with minimum environmental footprint and same QoL
- Model of such a society: Conserver Society, developed by Science Council of Canada, 1977



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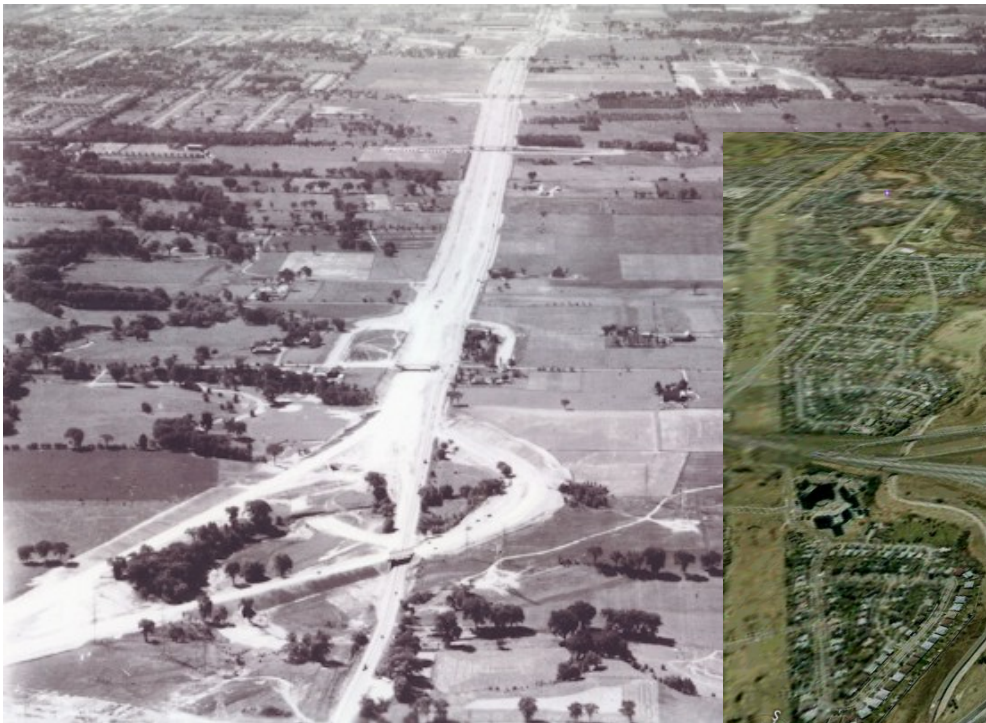
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The Sustainable Society Challenge: Intersection of Highways 401 and 427 in Toronto

As it looked 50 years ago....



As it looks today....



The Sustainable Society Challenge:
How do we want it to look in 50 years?

?

Our approach

If --

- we postulate a Sustainable Society, an environmental Vision with minimum footprint, 50 -100 years into the future...

Then --

- How might we get there? What do we need to deploy?
- ***What might be the barriers to innovation? How might we overcome them?***
- What do we need to change institutionally and socially?

Step 1: Review sustainability visions

- Conserver Society (Science Council, 1977)
- Sustainable Development “Our Common Future” (1987)
- Beyond Kyoto (Torrie, 2002)
- NRTEE low energy scenario (Torrie, 2007)
- Jaccard 2008 (Pembina/Suzuki)
- Cities^{plus}, QUEST, Choosing our future (Ottawa-Gatineau)

STEP 2: Lessons From the Past...

- If push comes to shove,
 - In times of real crisis,
- Society can adapt.

LOOK BACK
50 – 100 years



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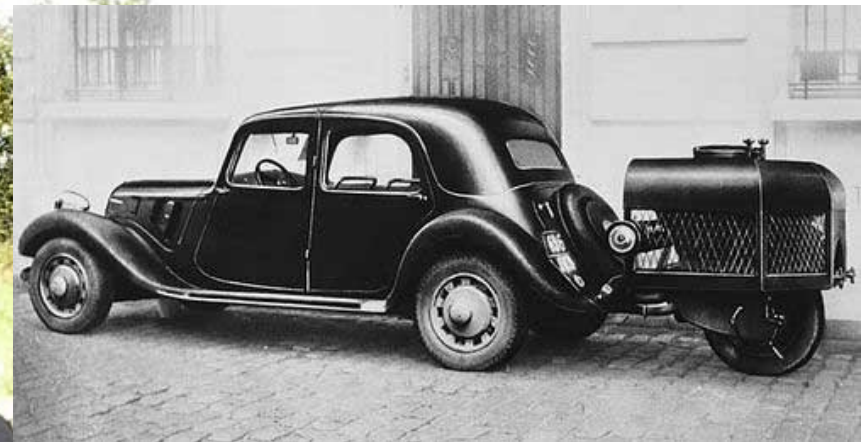
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In times of crisis or war, we CAN do without oil...



**Taxis in Paris during
WWII German
occupation, powered
by wood stove gas
("Gazogène")**

50 to 100 years is –

- Long enough to make vested interests and NIMBY insignificant
- Sufficient time to turnover/gut almost all of infrastructure, roads, houses, buildings etc.
- Allows for major developments and changes in technology, institutions, laws, and regulations

In 50 years, technology can change radically:

Record Players and Colour TVs of the 50's



In 50 years, technology can change radically:
Record Players and Colour TVs of the 50's
vs. Today's iPod





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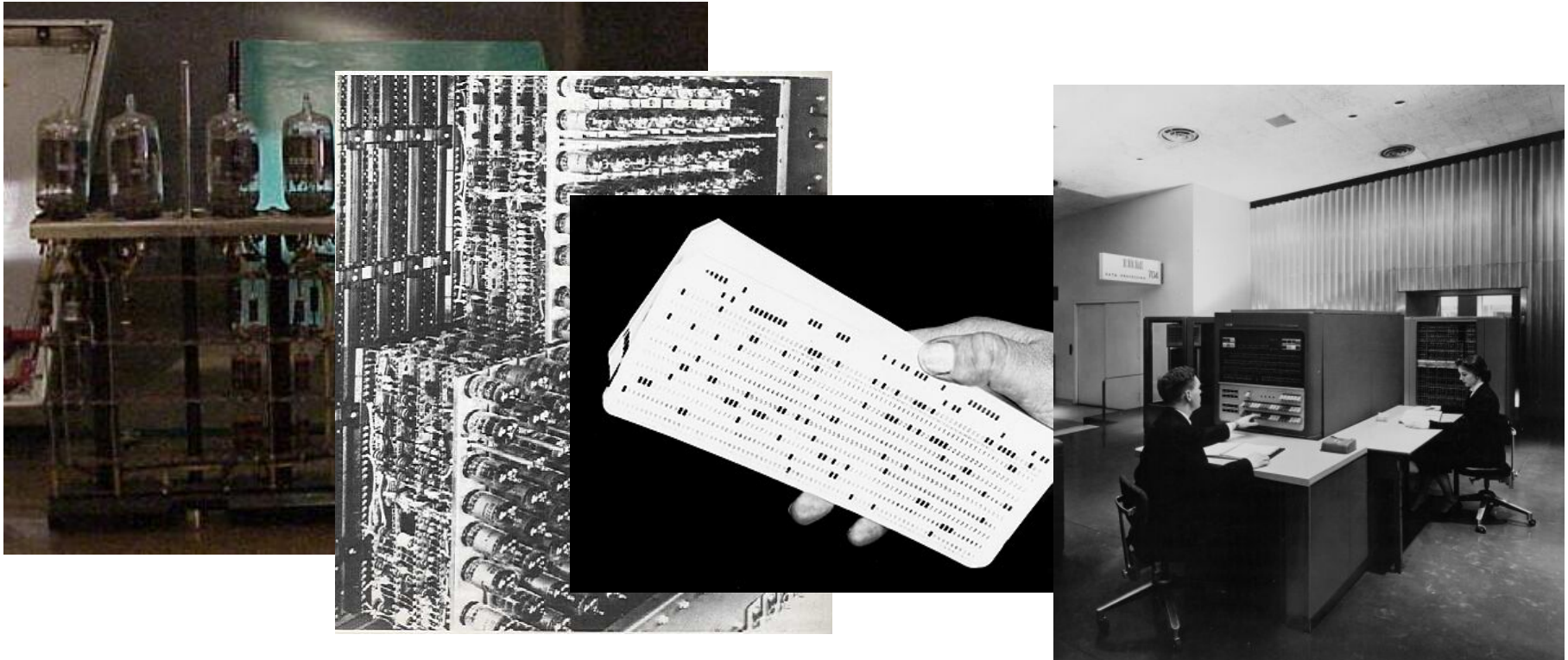
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In 50 years, technology can change radically:

Computers of the 50s :IBM 704



In 50 years, technology can change radically:

Computers of the 50s :IBM 704
vs. Eurocom notebook (1,000,000 faster)



Step 3: Back casting

- Back casting from a Sustainable Society –
- What do we need to do today, 2, 5, 10, 20, 35 years from now, to get there in 50 years?

Step 4: Identifying major institutional blockages

- What's stopping us from becoming a sustainable society?
- What are the barriers to innovation and technology deployment?
- How might we overcome them?



Why...?



HMW evolve to a sustainable society over next 50 years

HMW over the next 50 years replace our entire social infrastructure: roads, transportation, factories, houses, buildings, schools, etc. to a sustainable society

HMW accelerate innovation and transformation in

- residential,
- Industrial/ commercial and
- Transportation sectors

HMW redesign our infrastructure & components in a **systems or holistic approach** to reduce energy and resource usage

HMW change our economic paradigms to reduce energy and resource use while maintaining quality of life

HMW identify & address barriers to innovation and deployment to move to a sustainable society

What's stopping us...?



One example of a sustainable vision:

- Torrie, Beyond Kyoto, Suzuki Foundation (2002)
- Residential sector can reduce GHGs by 60% by 2030 (from 2004)



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Challenge:

How might we deploy

55+ Technologies

**into 10 to 15 million residential
units, by 2030**



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How Might We...
make the residential sector
totally green?

What's stopping us...?

What can we learn from past experience with energy efficiency programs?

- **Analysis of 3 program evaluation studies by Telfer MBA students**
- **Fresh perspective, focus on barriers to innovation and change**

1. **Jason Spears – COSP**
2. **Bénédicte Lossfedl – CHIP**
3. **Anne Murray-Choudhary- R2000**



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