Climate Change ➔ Adapt? Mitigate?

For centuries, atmospheric carbon dioxide had never been above this line

current level

1950 level

years before today (0 = 1950)

http://climate.nasa.gov/evidence/

LA Times

AP Images

Wikipedia
Mission

The mission of TISED is to produce innovative engineering and design solutions and intellectual capacity that enables us to protect and nurture Earth and its’ inhabitants to meet the needs of current and future generations.

Goals

• To catalyze interdisciplinary and inter-institutional research that provides solutions to local and global sustainability challenges.

• To inform and advance policies in support of governments, industry and other organizations, to advance development, particularly as relating to engineered and designed systems.

• To educate current and future generations of engineers, urban planners and architects to be leaders in sustainability in their professions.

• To create and participate in forums for sustainability by engaging the university community, decision-makers and the public in critical thinking and action.
What we do

**Educate**
- Courses
  - Sustainable Design of Urban Communities
- Energy Analysis
- Future Master’s program
- Research awards, fellowships, student training

**Catalyze research**
- Research by members
- Scholar-in Residence
- Research Workshops Program
- Faculty Scholars
- Research Chair

**Outreach to public and stakeholders**
- Educational speaker events
- Online sustainable engineering and design info
- Social media networks

**Inform public policy**
- Stakeholder consultations
- Québec’s Energy Future: A Policy Brief for Government
Themes

- Renewable Energy & Energy Efficiency
- Sustainable Infrastructure & Urban Development
- Sustainable Industrial Processes & Manufacturing
Renewables: What holds us back? What moves us ahead?

Third Annual Trottier Symposium in Sustainable Engineering, Energy and Design
March 8th and 9th, 2016, 6:30PM-8:30PM

trottiersymposium.org

McGill Faculty of Engineering
TISED Trottier Institute for Sustainability in Engineering and Design
Polytechnique Montréal
IET Institut de l’Énergie Trottier

Stockage dans les systèmes d’énergie électrique durables: La poussée technologique et l’influence des politiques
Resource Consumption for Material Production

Credit: Mike Ashby
Iron Intensity for Transportation Options (180 persons)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Iron Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>15 kg/capita</td>
</tr>
<tr>
<td>Walking</td>
<td>0 kg/capita</td>
</tr>
<tr>
<td>Bus</td>
<td>10 Mg/bus</td>
</tr>
<tr>
<td>Personal Car</td>
<td>1 Mg/car</td>
</tr>
</tbody>
</table>

Credit: Tom Graedel