



University of Salford  
A Greater Manchester University

# Geolinking content

Experiments in connecting virtual and physical places



# Outline

- Google Maps and Google Earth
- Geo metadata for web sites/pages
- Flickr - now also for non-geeks
- Microformats
- Extending XML



# Google Maps and Google Earth

- What's happening at institutional level at Salford?
  - Early prototype for campus map (Jan 2005)
  - On ice (beta) since then, but now being revived
  - [http://www.salford.ac.uk/travel/google\\_map/](http://www.salford.ac.uk/travel/google_map/)



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# Google Maps and Google Earth

Campus and accommodation overview



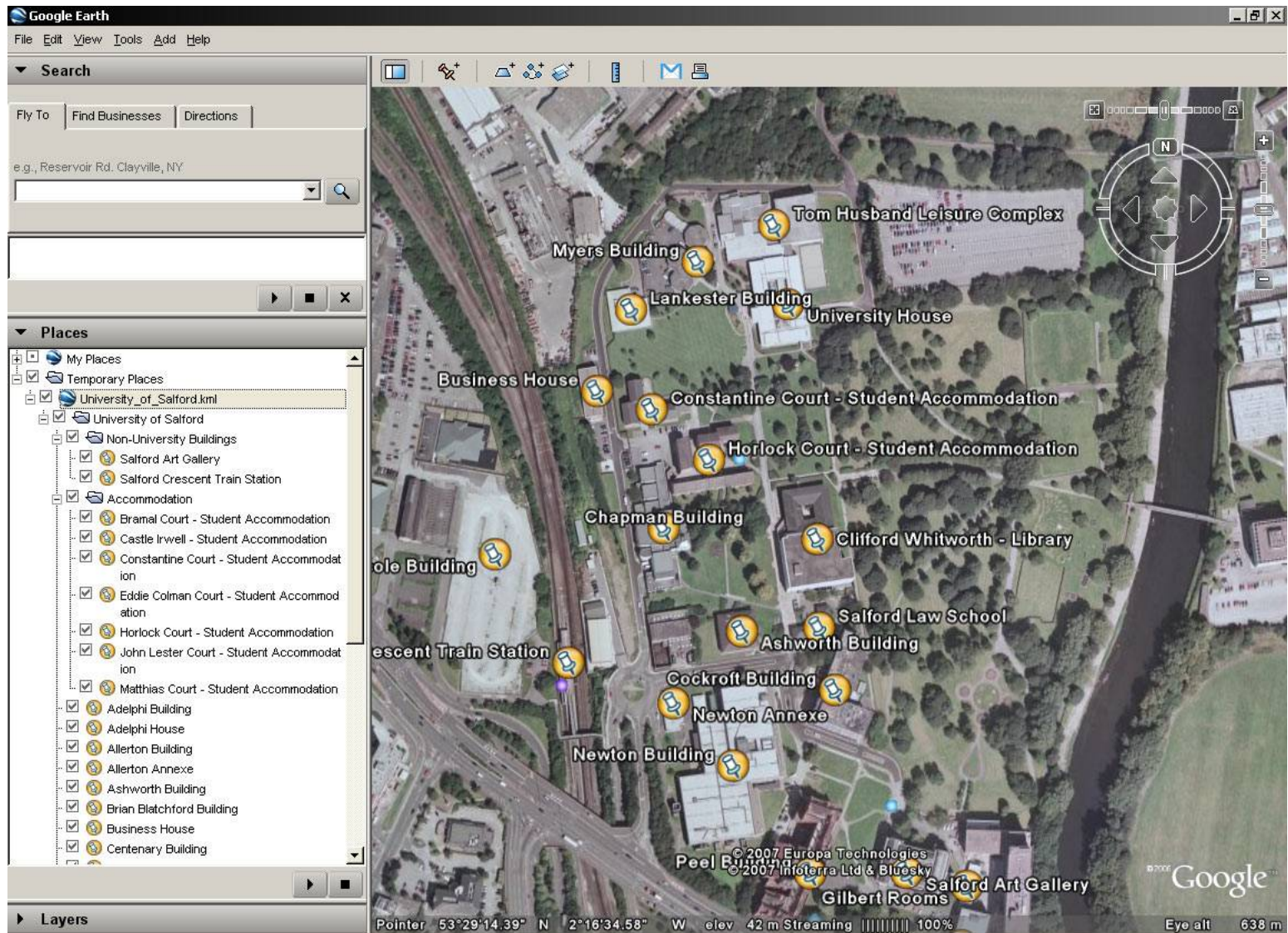
If you're using [Google Earth](#), you can [download the University of Salford KML file](#)

# Google Maps and Google Earth





# Google Maps and Google Earth

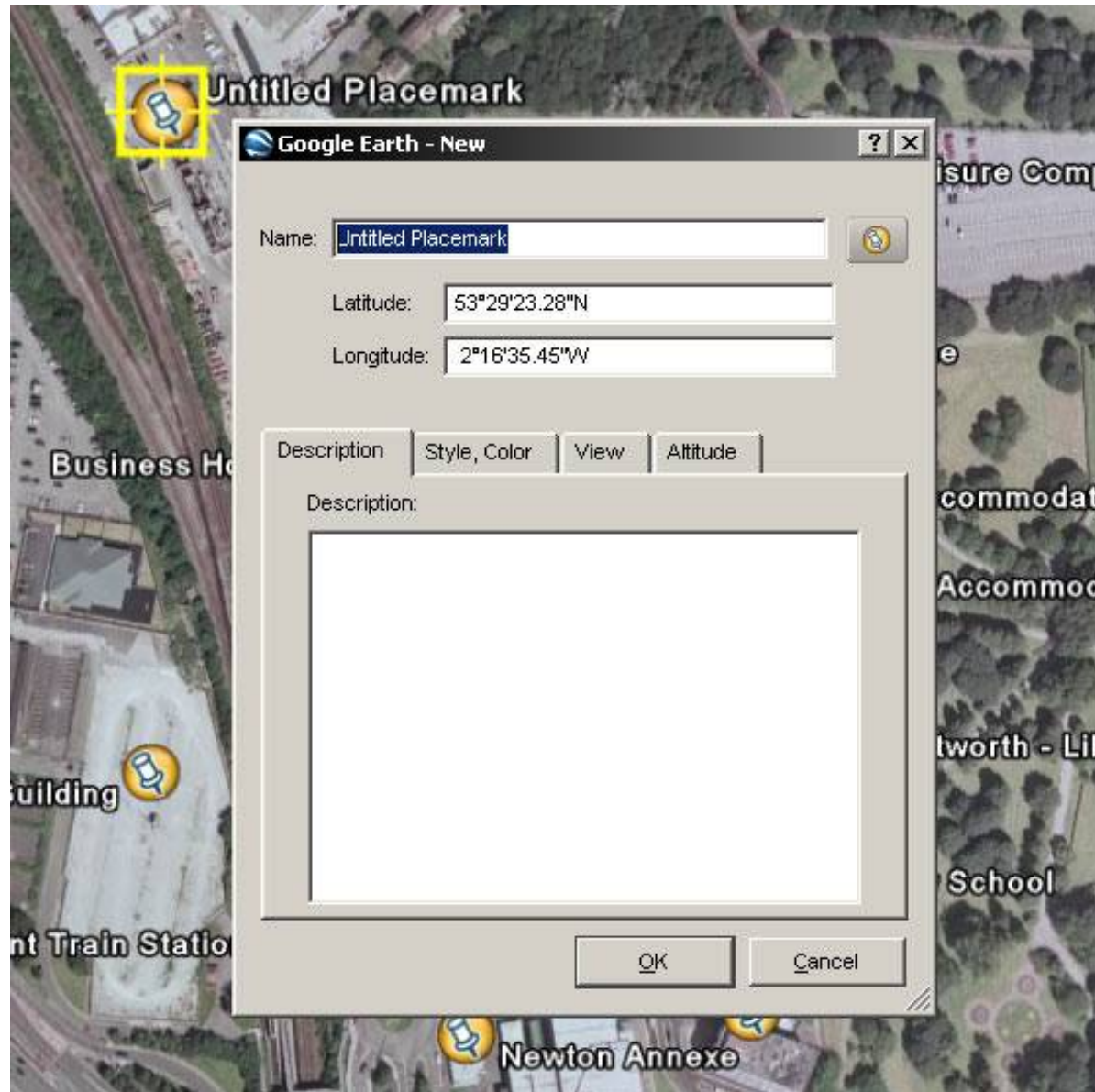




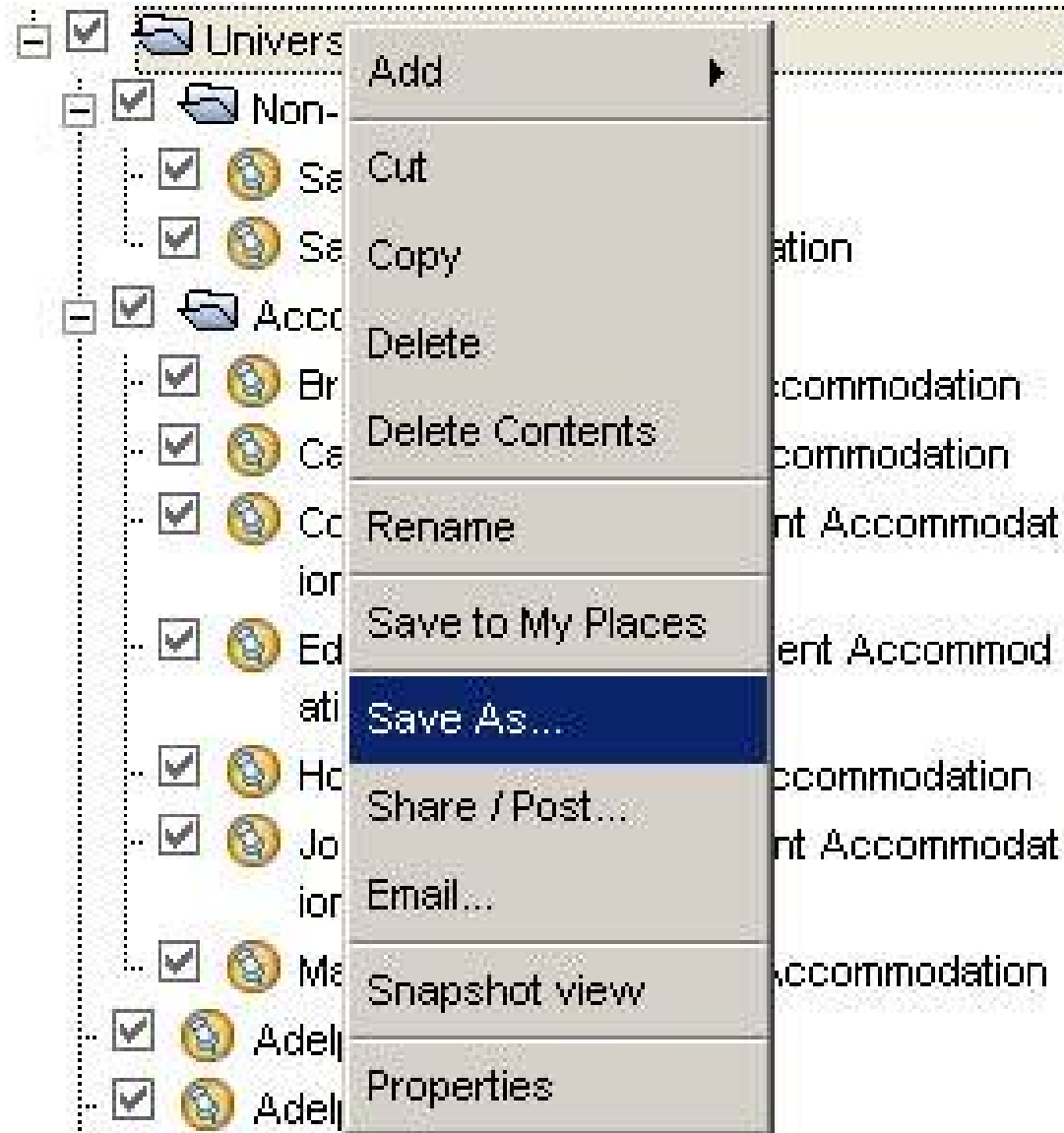
# Google Maps and Google Earth

- Challenges to build?
  - Acquiring geo data
  - Integrating into web pages

# Google Earth as authoring tool



# Google Earth as authoring tool





# Google Maps API

- <http://www.google.com/apis/maps/documentation/>
- Customisation to read KML files directly
- Tweaks to automagically determine center point (zoom level in next round of tweaks)



# Potential issues?

- Innovative?
  - Maybe in 2005...
- Geo data easy to maintain?
  - Separate KML file
- Accessibility of interface?
  - <http://blogs.cetis.ac.uk/accessibility/2007/01/29/can-you-really-have-an-accessible-google-map/>



# Geo metadata for web sites/pages

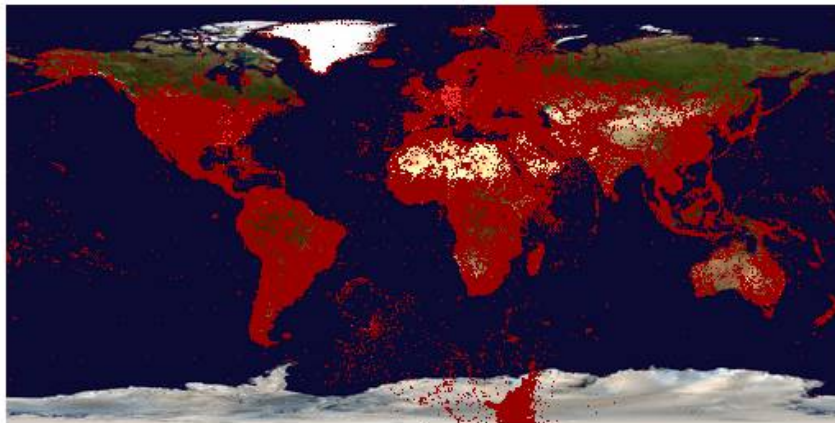
- ...or how I waste my spare time
- <http://geourl.org>

# geourl.org in all its glory



[Home](#) | [Add your site](#) | [Weblog](#)

## The GeoURL ICBM Address Server



- [GeoURL meets Google Maps](#)
- [GeoURL source code](#)
- [License](#)
- [Latitude and longitude data in the RSS feeds](#)
- [RSS feeds](#)

sites added in the last 24 hours are bright.

GeoURL is a location-to-URL reverse directory. This will allow you to find URLs by their proximity to a given location. Find your neighbor's blog, perhaps, or the web page of the restaurants near you. GeoURL is listing 1,711,092 sites.

[Add yourself to the database.](#)

### Newly added sites

[Ferienwohnung Ferienwohnungen Hörbranz - Urlaub und Ferien in Hörbranz](#) Near Hörbranz, Austria [recenter](#)  
[Ferienwohnung Ferienwohnungen Lagolio Iraklion - Urlaub und Ferien in Lagolio](#) Near Iraklion, Greece [recenter](#)  
[Ferienwohnung Ferienwohnungen Diano San Pietro Blumenriviera Ligurien Italien - Urlaub und Ferien in Diano San Pietro](#) Near Imperia, Italy [recenter](#)  
[GTalk Profile :: Sayagyi u mya kyaing](#) Near Taunggyi, Myanmar [recenter](#)  
[Emorel Workchop](#) Near Redding, MA, United States [recenter](#)



# geourl.org process

- Find your coordinates
- Add relevant META elements to page/site
- Submit your site to geourl.org



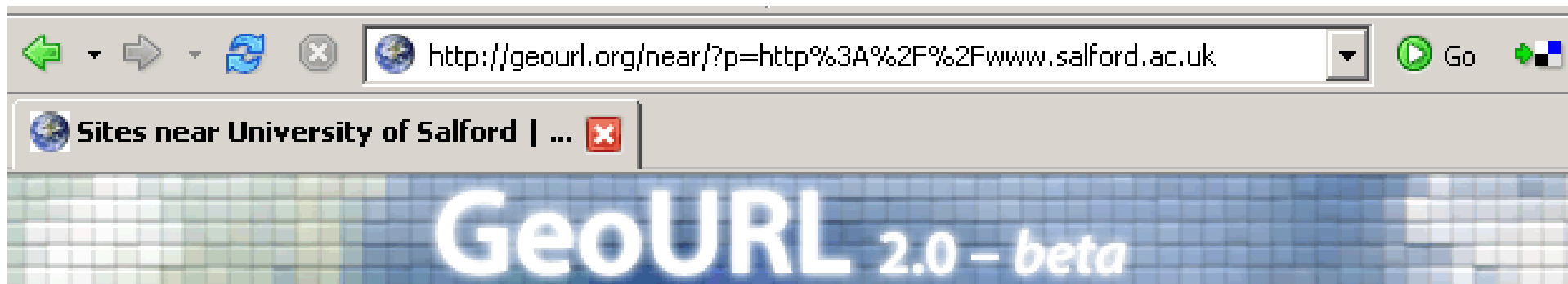
# geourl.org META

```
<meta name="geo.position" content="53.483541;-2.270666" />
```

```
<meta name="ICBM" content="53.483541,-2.270666" />
```

```
<meta name="DC.title" content="University of Salford | A  
Greater Manchester University" />
```

# geourl.org in action - near URL



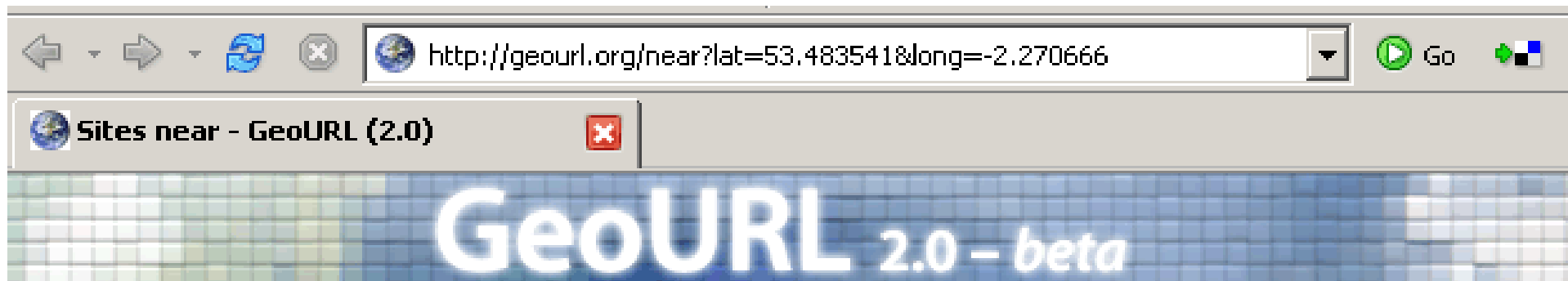
[Home](#) | [Add your site](#) | [Weblog](#)

Sites near [University of Salford | A Greater Manchester University](#) (53.484, -2.271) Near Salford,  
(<http://www.salford.ac.uk> is an alias for <http://www.salford.ac.uk/>)

last updated 2007-05-19 10:16:19, created 2005-03-02 12:22:14. [atom](#) | [rss](#) | [Google Maps](#) | [MultiMap](#) | [Mapquest](#)

- [ [recenter](#) ] [Property for sale in University of Salford](#) (0.1 km SW) Near Salford 166 more from
- [ [recenter](#) ] [Salford - City and Borough of Salford - Reino Unido - GeoSeven](#) (0.3 km E) Near Salford  
4 more from [www.geoseven.com](http://www.geoseven.com)
- [ [recenter](#) ] [Salford, City and Borough of Salford, Reino Unido - glosk](#) (0.3 km E) Near Salford  
47 more from [www.glosk.com](http://www.glosk.com)
- [ [recenter](#) ] [Geograph::River Irwell at Salford Crescent::SJ8298](#) (0.4 km E) Near Salford 86 more from
- [ [recenter](#) ] [Paraxial.co.uk](#) (0.8 km E) Near Salford

# geourl.org in action - near LAT/LONG



[Home](#) | [Add your site](#) | [Weblog](#)

Sites near 53.484, -2.271 Near Salford, United Kingdom

- [ [recenter](#) ] | [University of Salford | A Greater Manchester University](#) Near Salford
- [ [recenter](#) ] | [Property for sale in University of Salford](#) (0.1 km SW) Near Salford 166 more from
- [ [recenter](#) ] | [Salford - City and Borough of Salford - Reino Unido - GeoSeven](#) (0.3 km E) Near Salford  
4 more from [www.geoseven.com](#)
- [ [recenter](#) ] | [Salford, City and Borough of Salford, Reino Unido - glosk](#) (0.3 km E) Near Salford  
47 more from [www.glosk.com](#)
- [ [recenter](#) ] | [Geograph::River Irwell at Salford Crescent::SJ8298](#) (0.4 km E) Near Salford  
86 more from [www.geograph.org.uk](#)
- [ [recenter](#) ] | [Paraxial.co.uk](#) (0.8 km E) Near Salford

# **geourl.org - but is it useful?**

- On its own, use is quite limited
  - Not really aimed at end user - just the geeks?
  - Interface not intuitive
  - Relies on sites being tagged and submitted
- However...
  - Good data repository (while it's up)
  - Can output RSS ... transformable / mash-up-able
  - Some sites added the META, which can be exposed to user



# Transformers...

- Converting RSS (an XML format) into KML (another XML format)
- XSLT - powerful and standardised
- <http://www.splintered.co.uk/experiments/77/>

# GeoURL to Google Earth



## GeoURL to Google Earth transformation

This experiment uses a [custom XSLT](#) to convert [GeoURL](#)'s site-specific "near" information in [RSS](#) format to create a [Google Earth KML](#) file.

You can create a static list (a snapshot based on the current sites indexed by GeoURL) or a [Google Earth network link](#), which can be refreshed from within the application to get an up-to-date listing. Note that, to conserve bandwidth, this script - which uses my handy [PHP feedreader class](#) - caches requested GeoURL [RSS](#) feeds for 12 hours

For diagnostic purposes, you can view the actual [XML](#) generated by the script. Otherwise, the generated file should automatically be loaded in Google Earth.

**N.B.:** the script does not currently contain any error handling. If a site is not included in GeoURL's index, the generate [KML](#) file will fail without a user friendly warning. Ensure that any site you submit was indeed indexed by GeoURL beforehand.

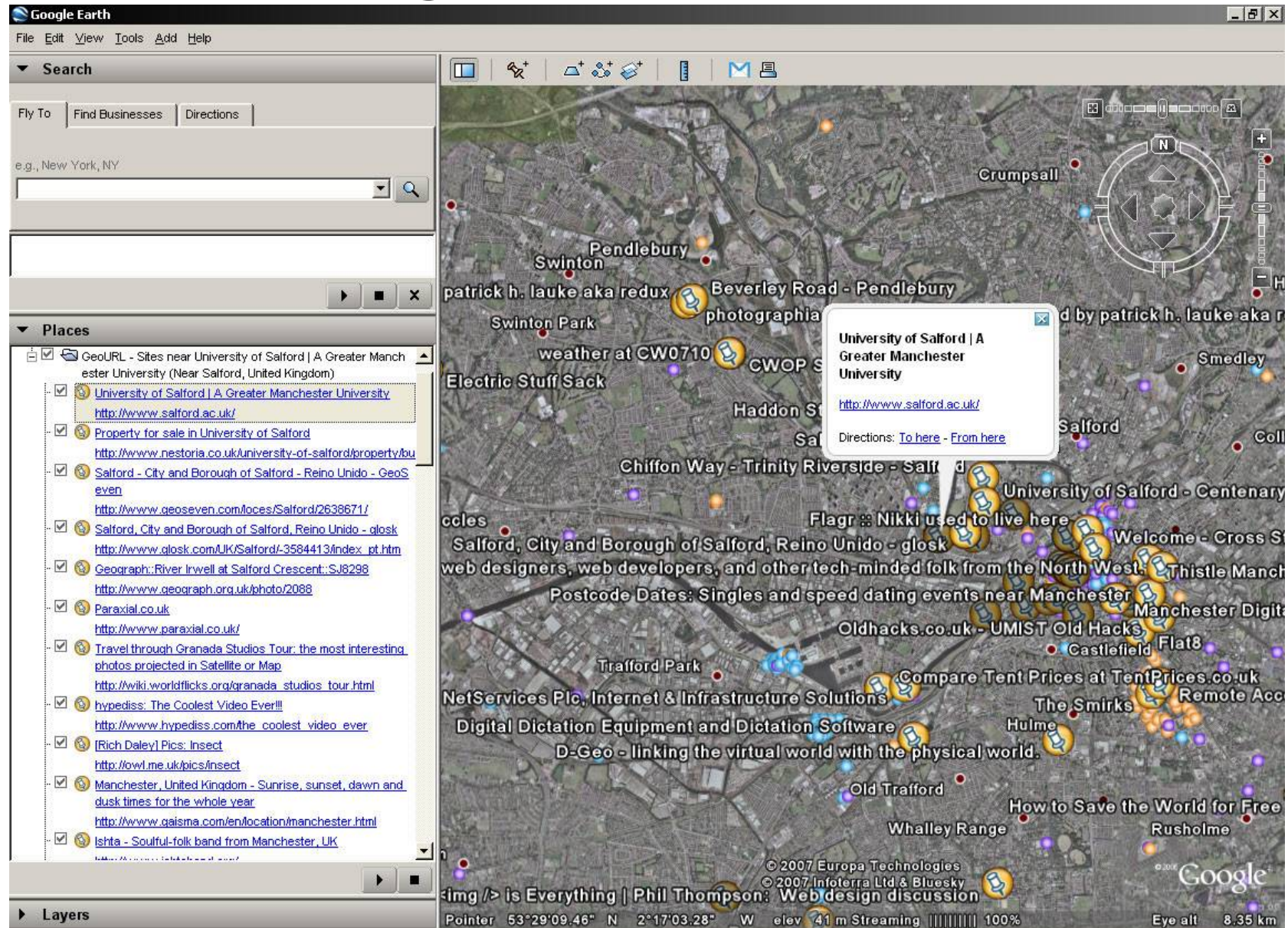
### Generate [KML](#) file

GeoURL indexed site

#### File type

- ☒ static list
- ☐ network link
- ☐ send as generic [XML](#) (for diagnostic purposes)

# GeoURL to Google Earth



The screenshot shows the Google Earth interface with a map of Salford, UK. The left sidebar displays a list of places under the heading "GeoURL - Sites near University of Salford | A Greater Manchester University (Near Salford, United Kingdom)". The list includes various links to university websites, property listings, and local businesses. A pop-up window for the University of Salford is visible, showing its name and a link to its website. The map shows various locations in Salford, including Crumpsall, Pendlebury, Swinton, and Salford. The bottom status bar shows coordinates (53°29'09.46" N, 2°17'03.28" W), elevation (41 m), and a scale of 100%.

**Places List:**

- GeoURL - Sites near University of Salford | A Greater Manchester University (Near Salford, United Kingdom)
- University of Salford | A Greater Manchester University  
<http://www.salford.ac.uk/>
- Property for sale in University of Salford  
<http://www.nestoria.co.uk/university-of-salford/property/bu>
- Salford - City and Borough of Salford - Reino Unido - GeoS  
<http://www.geoseven.com/locos/Salford/2638671/>
- Salford, City and Borough of Salford, Reino Unido - glosk  
[http://www.glosk.com/UK/Salford/-3584413/index\\_pt.htm](http://www.glosk.com/UK/Salford/-3584413/index_pt.htm)
- Geograph: River Irwell at Salford Crescent: SJ8298  
<http://www.geograph.org.uk/photo/2088>
- Paraxial.co.uk  
<http://www.paraxial.co.uk/>
- Travel through Granada Studios Tour: the most interesting photos projected in Satellite or Map  
[http://wiki.worldflicks.org/granada\\_studios\\_tour.html](http://wiki.worldflicks.org/granada_studios_tour.html)
- hypediss: The Coolest Video Ever!!!  
[http://www.hypediss.com/the\\_coolest\\_video\\_ever](http://www.hypediss.com/the_coolest_video_ever)
- [Rich Daley] Pics: Insect  
<http://owl.me.uk/pics/insect>
- Manchester, United Kingdom - Sunrise, sunset, dawn and dusk times for the whole year  
<http://www.gaisma.com/en/location/manchester.html>
- Ishta - Soulful-folk band from Manchester, UK  
<http://www.ishta.co.uk/>

**Map Labels:**

- Crumpsall
- Pendlebury
- Swinton
- patrick h. lauke aka redux
- Beverley Road - Pendlebury
- photographia
- weather at CW0710
- CWOP S
- Electric Stuff Sack
- Haddon St
- Sal
- Chiffon Way - Trinity Riverside - Salford
- University of Salford - Centenary
- Flagr :: Nikki used to live here
- Salford, City and Borough of Salford, Reino Unido - glosk
- web designers, web developers, and other tech-minded folk from the North West
- Postcode Dates: Singles and speed dating events near Manchester
- Oldhacks.co.uk - UMIST Old Hacks
- Castlefield Flat8
- Compare Tent Prices at TentPrices.co.uk
- NetServices Plc, Internet & Infrastructure Solutions
- Digital Dictation Equipment and Dictation Software
- D-Geo - linking the virtual world with the physical world.
- Old Trafford
- Whalley Range
- How to Save the World for Free
- Rusholme
- Thistle Manch
- Manchester Digit
- Remote Acc
- The Smirks
- Hulme

**Status Bar:**

© 2007 Europa Technologies  
© 2007 Infoterra Ltd & Bluesky  
[img /> is Everything | Phil Thompson: Web design discussion  
Pointer 53°29'09.46" N 2°17'03.28" W elev 41 m Streaming 100% Eye alt 8.35 km



## Still fairly niche...

- ...but imagine the possibilities
  - pages/sites with standardised geo META
  - repository for this information (harvested?)
  - XML output and transformation
  - Google Earth, Google Maps, etc for end user presentation



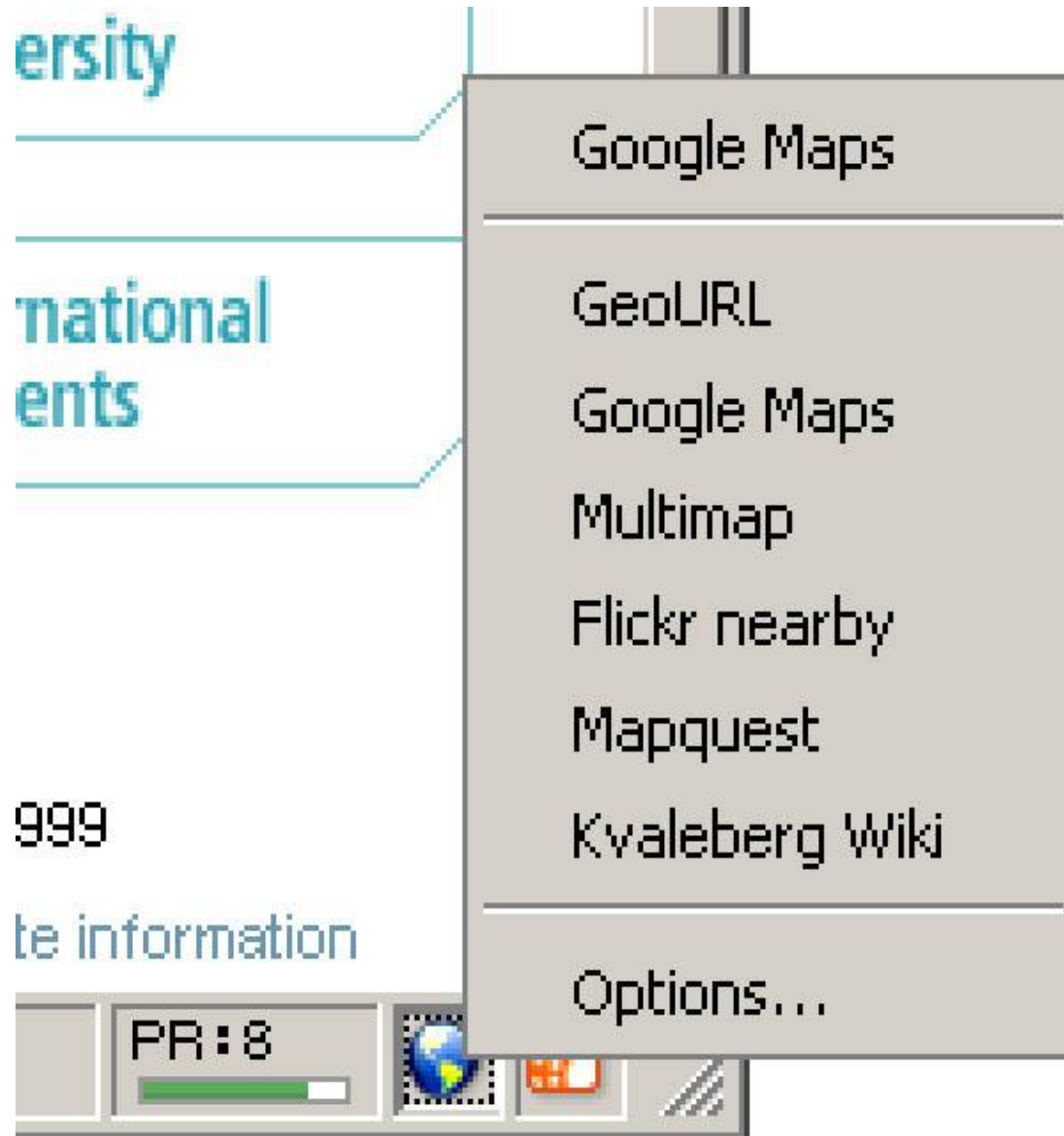
# ICBM/geo.location data for end-users?

- Early experimentation with Firefox extensions
  - Detect META in current page
  - Make data useful to end-user
  - <http://www.splintered.co.uk/experiments/71/>

# Firefox GeoURL extension in action



# Firefox GeoURL extension in action






# Beyond browser extensions

- Making the META information useful does not have to happen at browser extension level
- Could build a web-based tool/script:
  - Pass it your URL
  - Have the user sent to relevant map
- Important bit: your geo data is embedded in your page's HEAD, not in a separate file


# Flickr - now also for non-geeks

- Good example of end-user friendly geolocation
  - Used to be niche: hand-tagging images
  - Now with WYSIWYG functionality
  - With certain cameras/phones: no end-user involvement necessary

# Flickr - hand-tagging of old









LOVES YOU


Signed in as [patrick h. lauke](#)  [Help](#) [Sign Out](#)

[Home](#) [You](#) [Organize](#) [Contacts](#) [Groups](#) [Explore](#)


[Search](#)

## GitP2006 - assorted geeks



 ADD NOTE  SEND TO GROUP  ADD TO SET  BLOG THIS  ALL SIZES  ORDER PRINTS [ROTATE](#) [DELETE](#)




[Geek in the Park](#) / Royal Learning


 Uploaded on August 29, 2006  
by [patrick h. lauke](#)


[patrick h. lauke's photostream](#)


 2,180 photos  
[browse](#)


This photo also belongs to:






 Hide machine tags (3)

 upcoming:event=93672 [x]

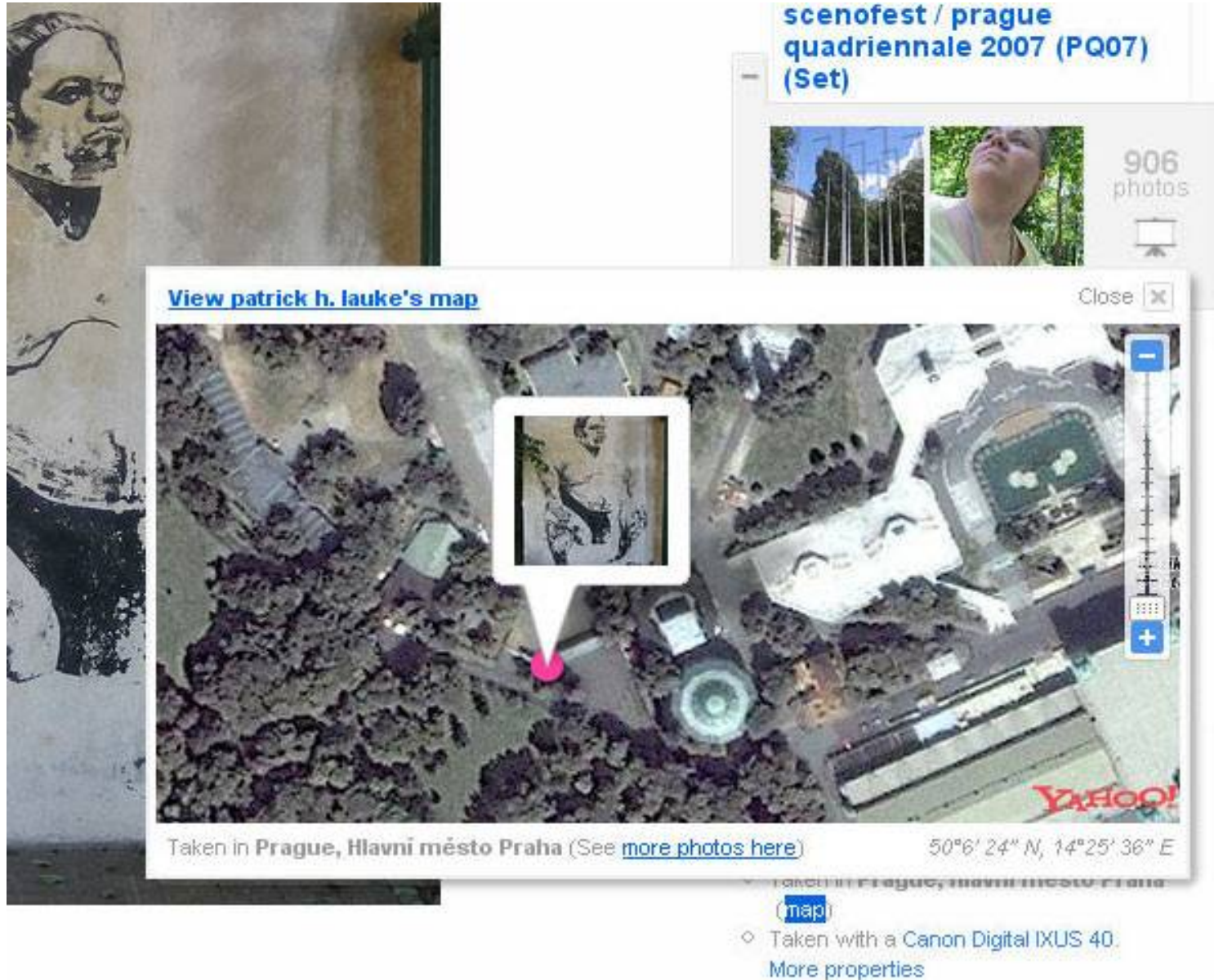
 geo:lat=52.288362 [x]

 geo:lon=-1.527009 [x]

 [lisa.h](#) [pro](#) says:  
Oh this looks fab! we'll have to organise something similar over here.  
Posted 11 months ago. ([permalink](#) | [delete](#))

 20060827 [x]  
 geekinthe park [x]  
 geekinthe park2006 [x]  
 multipack [x]  
 themultipack [x]

# Flickr - now WYSIWYG



scenofest / prague  
quadriennale 2007 (PQ07)  
(Set)

906  
photos

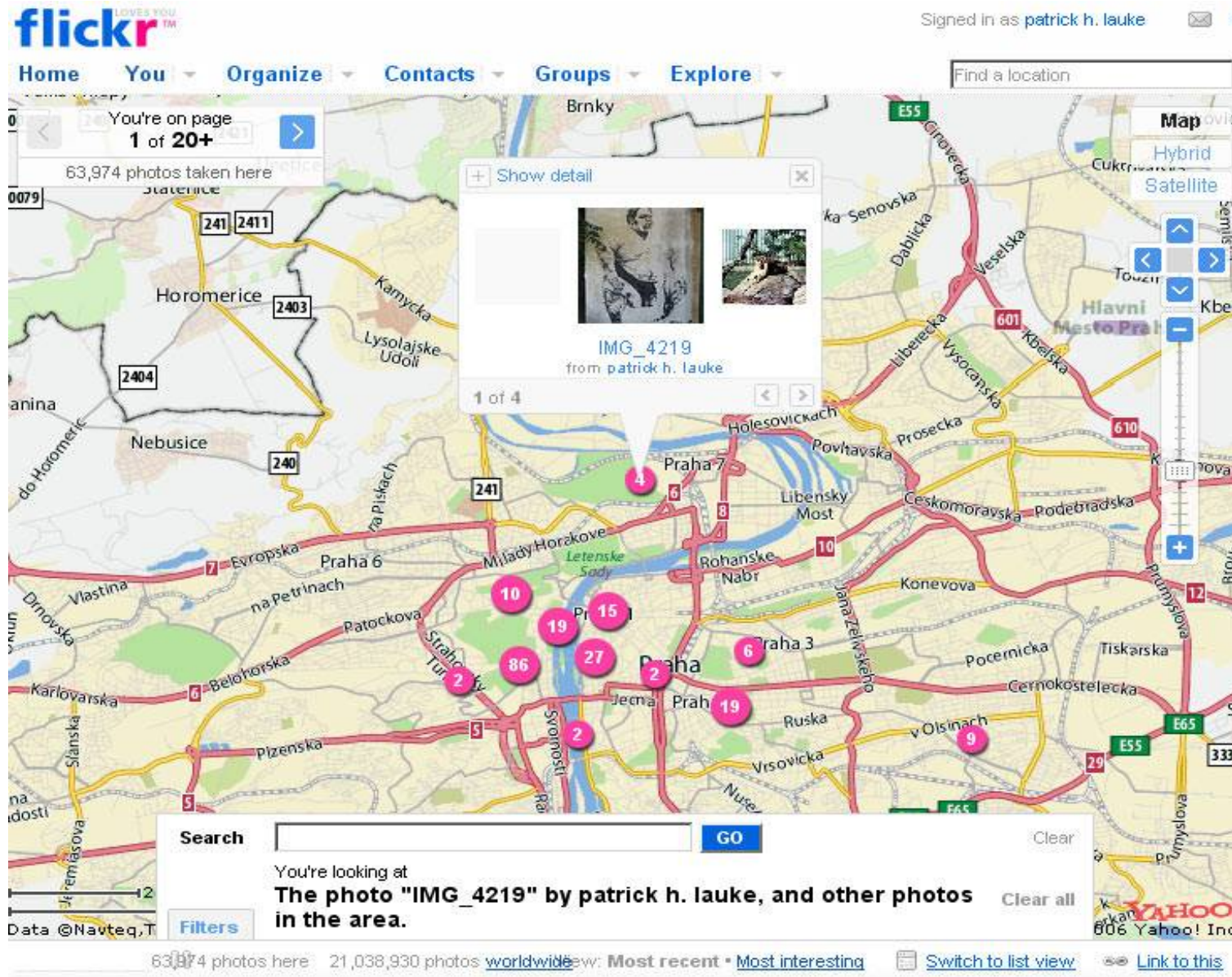
[View patrick h. lauke's map](#) Close

Taken in Prague, Hlavní město Praha (See [more photos here](#)) 50°6' 24" N, 14°25' 36" E

Taken in Prague, Hlavní město Praha  
([map](#))

Taken with a Canon Digital IXUS 40.  
[More properties](#)

# Flickr - end-user friendly



The screenshot displays the Flickr website interface. At the top, the Flickr logo is on the left, and the user is signed in as 'patrick h. lauke'. Navigation tabs include Home, You, Organize, Contacts, Groups, and Explore. A search bar is located on the right. The main content area shows a map of Prague with numerous pink circular markers indicating photo locations. A detail window for the photo 'IMG\_4219' by 'patrick h. lauke' is open, showing a painting. The bottom of the page features a search bar, a 'GO' button, and a footer with the text '63,974 photos here' and '21,038,930 photos worldwide'. Sorting options include 'Most recent', 'Most interesting', and 'Switch to list view'. A 'Link to this' option is also present.

63,974 photos here 21,038,930 photos worldwide [Most recent](#) [Most interesting](#) [Switch to list view](#) [Link to this](#)

# Flickr + Google Maps + ...

- Geotagged photos can be put to use
  - <http://www.flickr.com/services/api/>
  - Mash-up with campus map? UK-wide map?
- Flickr as repository is extensible
  - Machine tags - roll your own mash-up friendly categorisation
  - <http://www.revish.com> - book:isbn=XXXXXXXXX
  - For universities ... institution code?

# Microformats

- Extending HTML usefulness via current technologies
- Embedding machine-readable data in pages
- <http://microformats.org/wiki/geo>



# Simple geo microformat examples

```
<div class="geo">GEO:  
<span class="latitude">37.386013</span>,  
<span class="longitude">-122.082932</span>  
</div>
```

```
<div class="geo">  
<abbr class="latitude" title="37.408183">N 37° 24.491</abbr>  
<abbr class="longitude" title="-122.13855">W 122° 08.313</abbr>  
</div>
```

# Why microformats?

- Jeremy Keith <http://adactio.com/> : 'Your page becomes your API' - geo data not in a separate file
- Can be piped through a script to extract data
  - PHP5 - <http://allinthehead.com/hkit/> (only vcard microformat at the moment, but extensible)
  - If using XHTML - could use XSLT
- Firefox 3.0 to support microformats natively (in the meantime, there's Operator)
- Accessibility issues?  
<http://www.webstandards.org/2007/04/27/haccessibility/>

# Extending XML

- By definition: eXtensible Markup Language
- Geolocating RSS feeds
  - <http://georss.org/>
  - <http://www.w3.org/2003/01/geo/>
- XHTML (sent as application/xhtml+xml) + Geo
- etc

# Some sort of conclusion?

- Considerations on how geo data is stored:
  - In a separate file (KML)?
  - As part of your page (META, microformat, other)?
  - On a 3<sup>rd</sup> party site (Flickr)?
- How maintainable is it?
- What's the value to the end-user?
  - Browser tools
  - Site tools
  - Aggregators



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# Thanks

Patrick H. Lauke

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<http://www.salford.ac.uk>

<http://www.splintered.co.uk>