



**Drawing with Satellites**  
an ESALA GPS drawing project

**ESALA**  
Edinburgh School of Architecture & Landscape Architecture

*Drawing with Satellites*

Published by Edinburgh School of Architecture and Landscape Architecture:

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Drawing with Satellites is a GPS project for Second year Architecture students at the Edinburgh School of Architecture and Landscape Architecture. The project was delivered by Chris Speed, Esther Polak, Ross Cruickshanks and Karlyn Sutherland.

For more information visit:

[www.esala.ac.uk](http://www.esala.ac.uk) / [www.esala.net](http://www.esala.net)

contact Chris Speed: [c.speed@eca.ac.uk](mailto:c.speed@eca.ac.uk)

For more information on Esther Polak and Ivar van Bekkum projects:

[www.estherpolak.nl](http://www.estherpolak.nl)

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### ***Introduction***

GPS technology retains some of the magic that all astronomical instruments possess - a dimension of reconciling the scale of the spaces that are outside of earth's atmosphere with a personal sense of place. Offering self-identification in space through a blue ball that drops on to a digital map in the palm of your hand, by communicating with half a dozen satellites that are orbiting the planet is an amazing idea to wrestle with. Achieved by calculating the difference in time that it takes for signals to be received from a network of satellites, GPS is one of the most practical examples of use of Einstein's General Theory of Relativity.

The conceptual and technical notion of our body's relationship with the instruments that are 'out there' and the devices that we hold in our hand is akin to the experience of drawing. A cognitive act that relies upon a reflexivity between representation and idea. Whether mediated through a pencil that offers a very short feedback, or a GPS receiver that has no display and its 'marks' only visible after they have been downloaded and processed later, drawing occurs in the reconciliation between the representation and the concept.

It was this gap between the action and the image that offered students of ESALA an opportunity to consider how they might draw the city of Edinburgh through the Drawing with Satellites workshop.

Students were asked to do two drawings over two days. Idea lead, since the results couldn't be imagined, the students adopted a range of strategies in response to three starting points (assignments) that were presented to them by Esther Polak:

i. Work with 2 lines:

This requires two groups to collaborate.  
The collaboration needs to be essential.

ii. Relocate an existing, meaningful route.

This means that participants should rotate, scale or change its starting point, or all of these.  
The relocation needs to give the route a new meaning.

iii. Draw a spiral.

The spiral needs to be meaningful in concept.

Responses were varied and the results are presented through this book. What was particularly interesting was the range of methods that the group adopted which fell into four overlapping categories:

*Social Practices, Temporal Projects, Code Controlled and works that were intentionally Ludic in approach.*

*Social Practices:* The projects that fall in to the category of Social Practices tended to use the habitual journeys of people, whose Edinburgh is defined by professional, institutional and occupational routines. Following people, or carrying out processes that adhere to centres of employment or practice, these works offer an insight into the city as a container for production.

*Temporal Projects* featured a particular focus upon time. Not equipped with a map, the GPS receiver tends to concentrate the user on time: the time that it takes to walk routes, the time between way points, the time between partners. Three of the projects in particular used time, as a driver for their drawing, and the results reminded us all of the value of time in articulating space

*Code Controlled:* Perhaps due to the digital substrate upon which the technology operated, or to the binary communication that was often required to instruct each other, a series of drawings used Code to

inform their development. Following rule bases that were developed, written down and then performed across the city, drawings that used Code tended to reveal the city's structural properties, and less the social.

*Ludic:* Finally was play, adopting gaming processes that echoed aspects of Code, the artists carried out drawings that engaged themselves with the city through recreation. Sophisticated at one level and more simple at another, the drawings that embody a Ludic quality that negotiated the landscape through amusement and fun.

The final drawings are evidence to these four inter-related means of interpreting the city. Guided to an extent by the instrument, in this case a GPS receiver, the drawings and their methods do not present the city per say, but rather its symptoms. Symptoms of its social, symbolic and structural form that gives us clues to its character. Body storming the city with strategies in 'hand', the architecture students learnt to draw Edinburgh in a way that made the 'image' subservient to the conceptual method. And with up to a four hour wait before the final image was processed, students operated in a non-representational void for significant parts of the workshop. A gap that seems to be ever increasingly important to understand as technologies continue to mediate what we think, what we see and what emerge as our drawings.

Chris Speed, ESALA, February 2011.

*Subjective versus objective mapping*  
*Mapping in conceptual art and locative media*

The workshop was co-led by the international artist Esther Polak (<http://www.estherpolak.nl/>).

Notes from Esther Polak's lecture, Day One, 9.30am

How to use new media to address the classical theme of visual arts; the experience of space?

During the lecture she presented three of her own projects:

AmsterdamREALTIME  
<http://realtime.waag.org/>

MILKproject  
<http://milkproject.net/>

NomadicMILK Project  
<http://www.nomadicmilk.net/>

Esther Polak gave examples of other artists work, that she feels relevant to the relation between conceptual art and locative media.

Fine arts:

Donald Judd, sculpture, *no title*, 1977.

Jan ten Compe, *View on Den Haag*, 1750.

Wouter Johannes van Troostwijk, *View on Linnaeusweg in Amsterdam*, 1805.

Anton Mauve, *Hay landscape in Laren*, 1887 .

Paul Joseph Constantin Gabriel, *It comes from far*, 1887.

Douglas Huebler, *Mapping Works*, 1973.

Richard Long, *Wind Stones*, 1985.

Richard Long, *A Line Made by Walking*, 1967.

Kim Dingle, *Maps of the U.S. Drawn from Memory by Las Vegas Teenagers*, 1990.

Francis Alÿs, “*Sometimes Doing Something Poetic Can Become Political, and Sometimes Doing Something Political Can Become Poetic*”, 2005.

Kanarinka, *It takes 154,000 breaths to evacuate Boston*, 2007.

Yoko Ono, “*Draw an imaginary map and follow it down an actual street.*”, 1970.

Stanley Brouwn, “*walk during a few moments very consciously in a certain direction; simultaneously an infinite number of living creatures in the universe are moving in an infinite number of directions.*” art & project bulletin 11, 1969.

Stanley Brouwn, “*THIS WAY BROWN*”, 1964.

Hamish Fulton, *Geronimo Homeland*, 2006.

Online project:

The Degree Confluence Project <http://confluence.org/>

Essay:

John Kirtland Wright *Terra Incognita*, 1946

Some examples of GPS used as legal proof against speed tickets.

Two Iphone apps: [everytrail.com](http://everytrail.com) [trailguru.com](http://trailguru.com)

Esther Polak studied graphic art and mixed media and is interested in how technology determines (visual) perception. In this context she explores the visual and documentary possibilities of GPS.

Her AmsterdamREALTIME project (2002) was one of the first large-scale art explorations in GPS (Global Positioning System) mapping. Ten inhabitants of Amsterdam carried per week a GPS tracer with them. Their routes through town were made visible on a projection screen in the exhibition space. The traces on screen form an alternative, highly personal map of the city. This was a joint project of artists Esther Polak, Waag and Society Jeroen Kee ([realtime.waag.org](http://realtime.waag.org)).

In 2004-2005 she developed MILKproject. In this project a European dairy transportation was followed from the udder of the (Latvian) cow, to the mouth of the (Dutch) consumer. All people who played a role in this chain received, for a day, a GPS-device that registered their movements. The team developed a lucid visualization-software for these traces, and let the participants react upon them in their own kitchens or living rooms. MILKproject tells the personal life stories of these very different Europeans, from the Latvian farmer to the Dutch open-air market salesman with his clients, who are all connected by one thing: the milk from a truck of one Latvian milk collector. The project was awarded with a Golden Nica at Ars Electronica in 2005. It was developed in collaboration with , Ieva Auzina and Rixc, Riga center of new media culture ([milkproject.net](http://milkproject.net)).

Her most recent project is NomadicMILK. For this project the tracks of both nomadic herdsman and regular dairy transports in Nigeria were recorded and visualized. The project used a newly developed GPS-visualization tool: a small robot drew the tracks directly on the ground in lines of sand. This way the tracks could be shown to the Nigerian participants and discussed with them along the road. ([www.nomadicmilk.net](http://www.nomadicmilk.net) <<http://www.nomadicmilk.net>> )

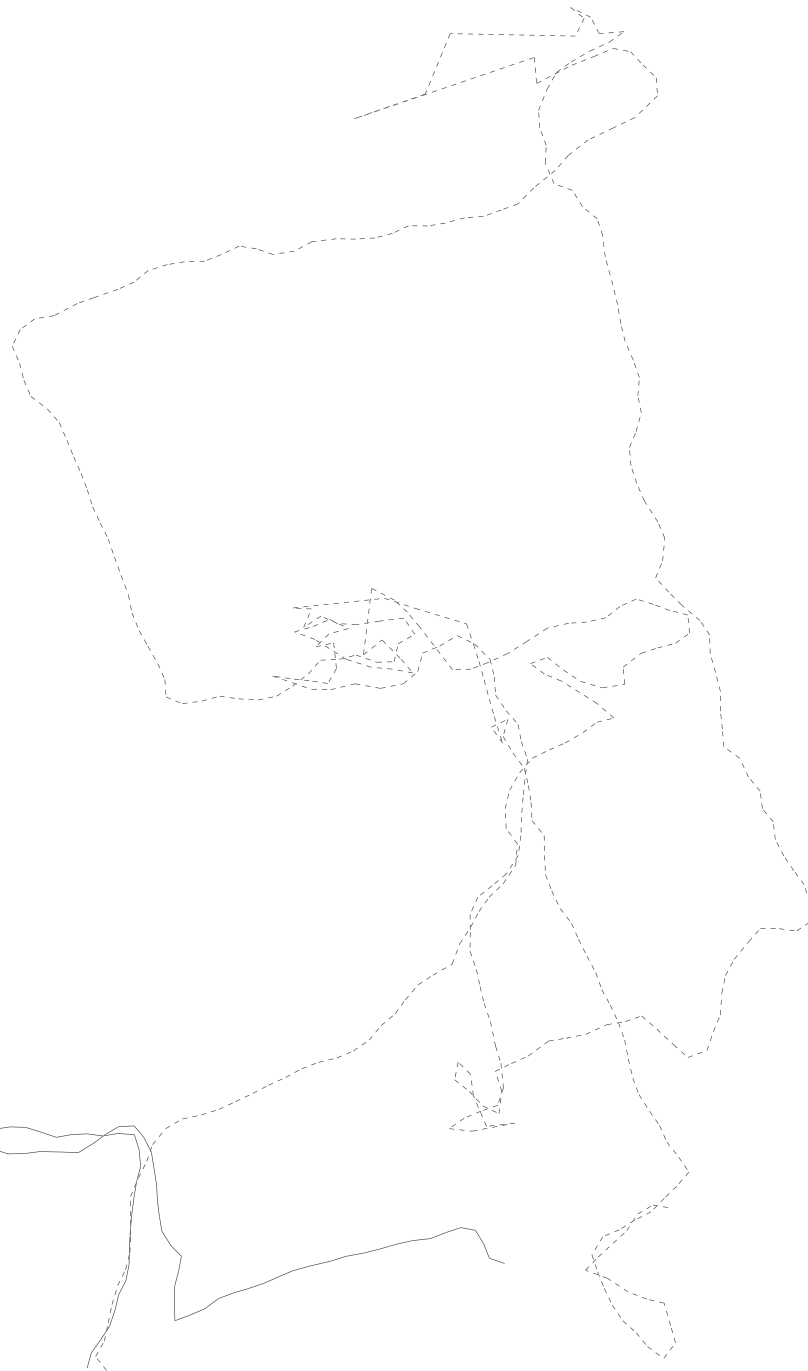
In her projects Polak manages to strip GPS of its nerdy ruffraff, and instead uses the technology for making comprehensible visualizations and telling human stories.

*Drawing with Satellites, 1st and 2nd February, 2011.*

*eca Student / Esala Student*

- 1) Middle Meadow Walk
- 2) Lecture Theatre
- 3) Library
- 4) Lunch
- 5) Studio
- 6) Material Shop
- 7) Work Shop
- 8) Middle Meadow Walk

Lewis MacLachlan  
Katie McGaan  
David Black  
David Millar  
Calum Campbell  
Calum MacDonald  
Sonia Brims  
Justine Ramage



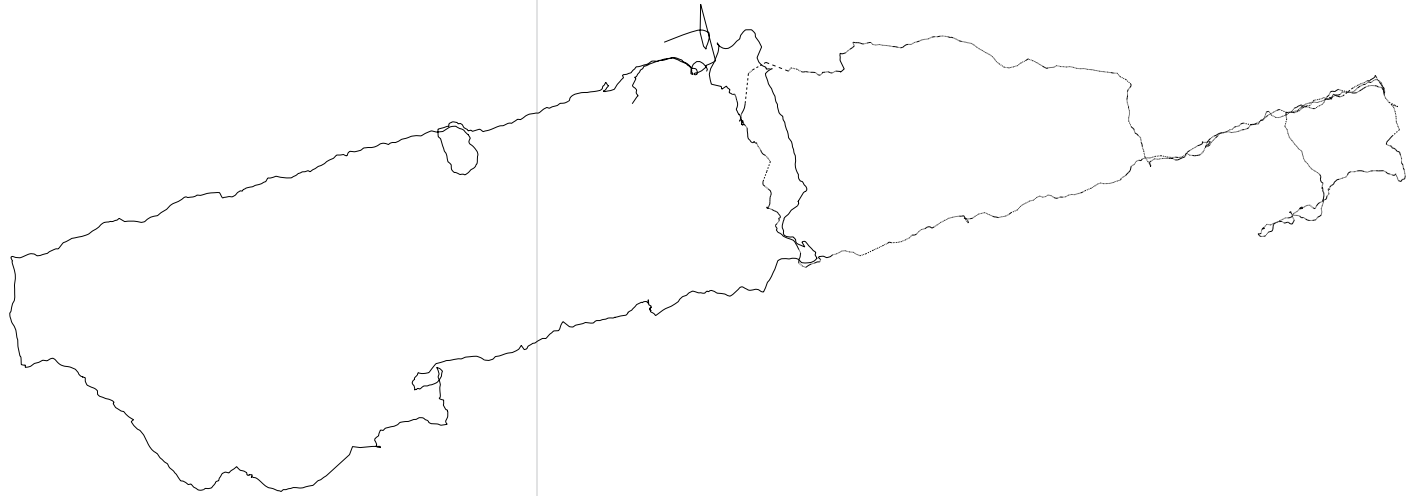
***Tourist***

- 1) Train Station
- 2) Tourist information
- 3) Scott's Monument
- 4) Galleries
- 5) Lothian Road
- 6) Castle Terrace
- 7) Castle
- 8) Royal Mile
- 9) Train Station

***Professional***

- 1) Train Station
- 2) Scotsman Newspaper Office
- 3) Parliament
- 4) Bar Lunch
- 5) Scotsman Newspaper Office
- 6) Coffee Stop
- 7) Train Station

Lewis MacLachlan  
Katie McGaan  
David Black  
David Miller  
Calum Campbell  
Calum MacDonald  
Sonia Brims  
Justine Ramage



*Spiral of Life: A geographical journey marking a life story, covering 80 years in 2 hours.*

0 years, Lauriston hospital - born at the spiral centre.

5-11 years, George Heriot school - cheeky but well-behaved.

12-17 years, St Thomas Of Aquinas R C High School - intelligent and friendly.

18-21 years, ECA- student representative and studies passionately.

22 years, McEwan Hall - graduates with a 2:1.

23-25 years, Sainsburys - takes a part-time job while deciding on career.

26-65 years, Deans Leslie & Co. - persuasive personality and ability to talk to anyone.

30 years, King's Hall church - meets The One, white wedding.

80 years, St Peter's church graveyard - end to a long, happy life.

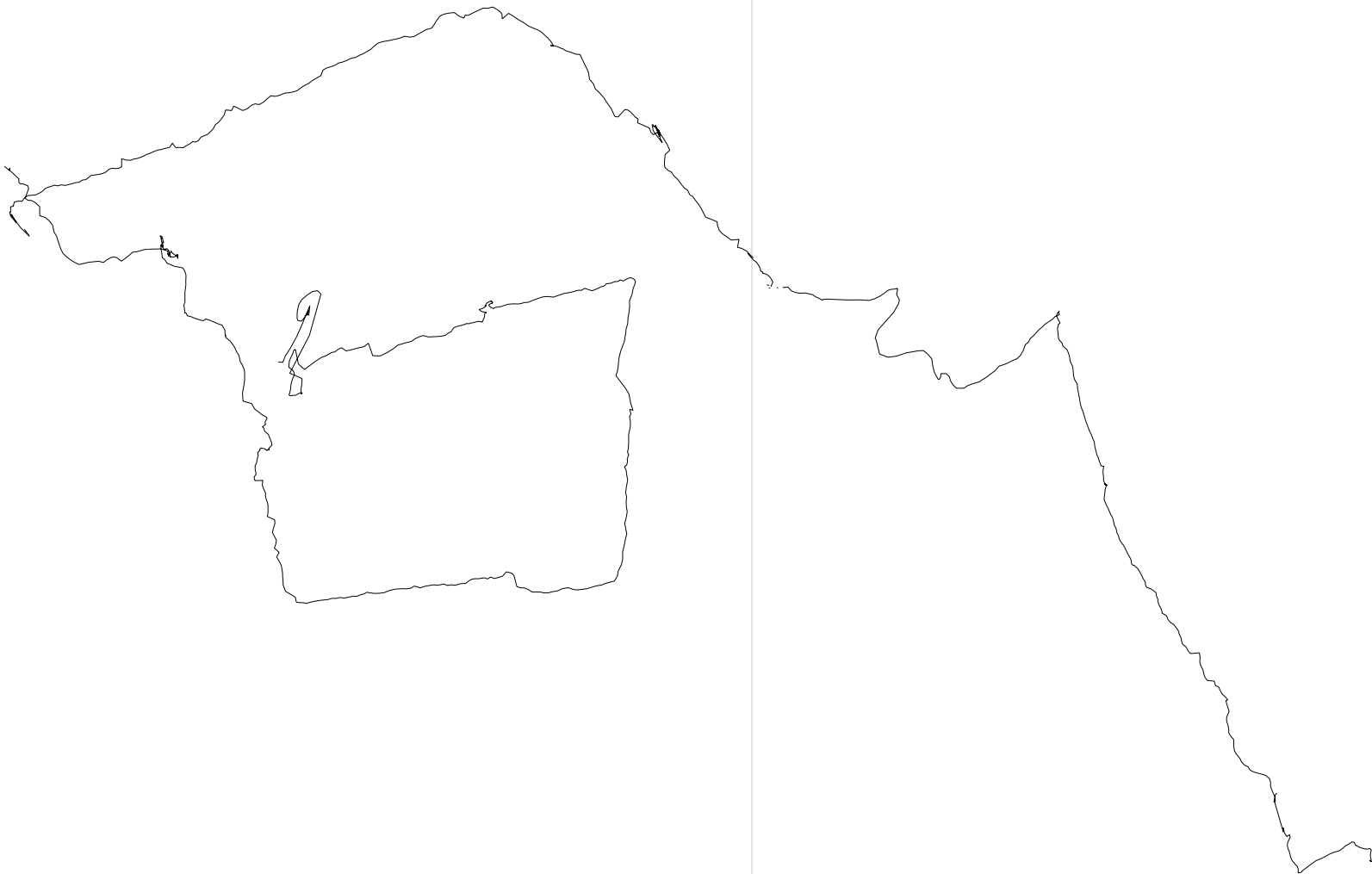
Abi Wu

Kathryn Chung

Yi-Hwa Lin

Slavka Gancheva

Aemilia Ross

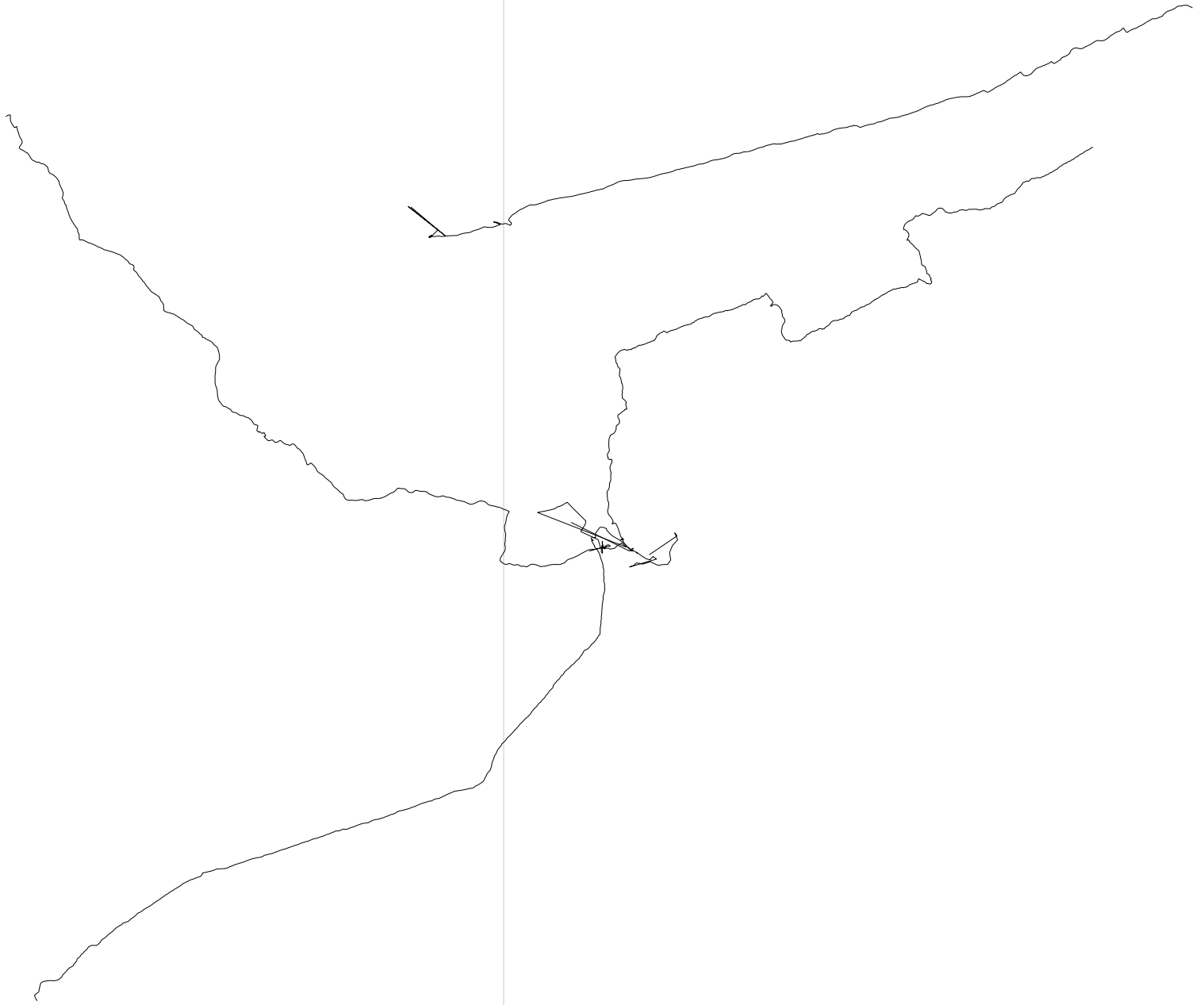


*Measured Time I*

As one of the primary processional routes in Edinburgh the Royal Mile is experienced by everyone in a different way. The time taken to travel this route was applied to different locations around the city as a measuring device.

For the final image each person attempted to experience the length of the royal mile as the other person did, walking the distance in the time taken by the other.

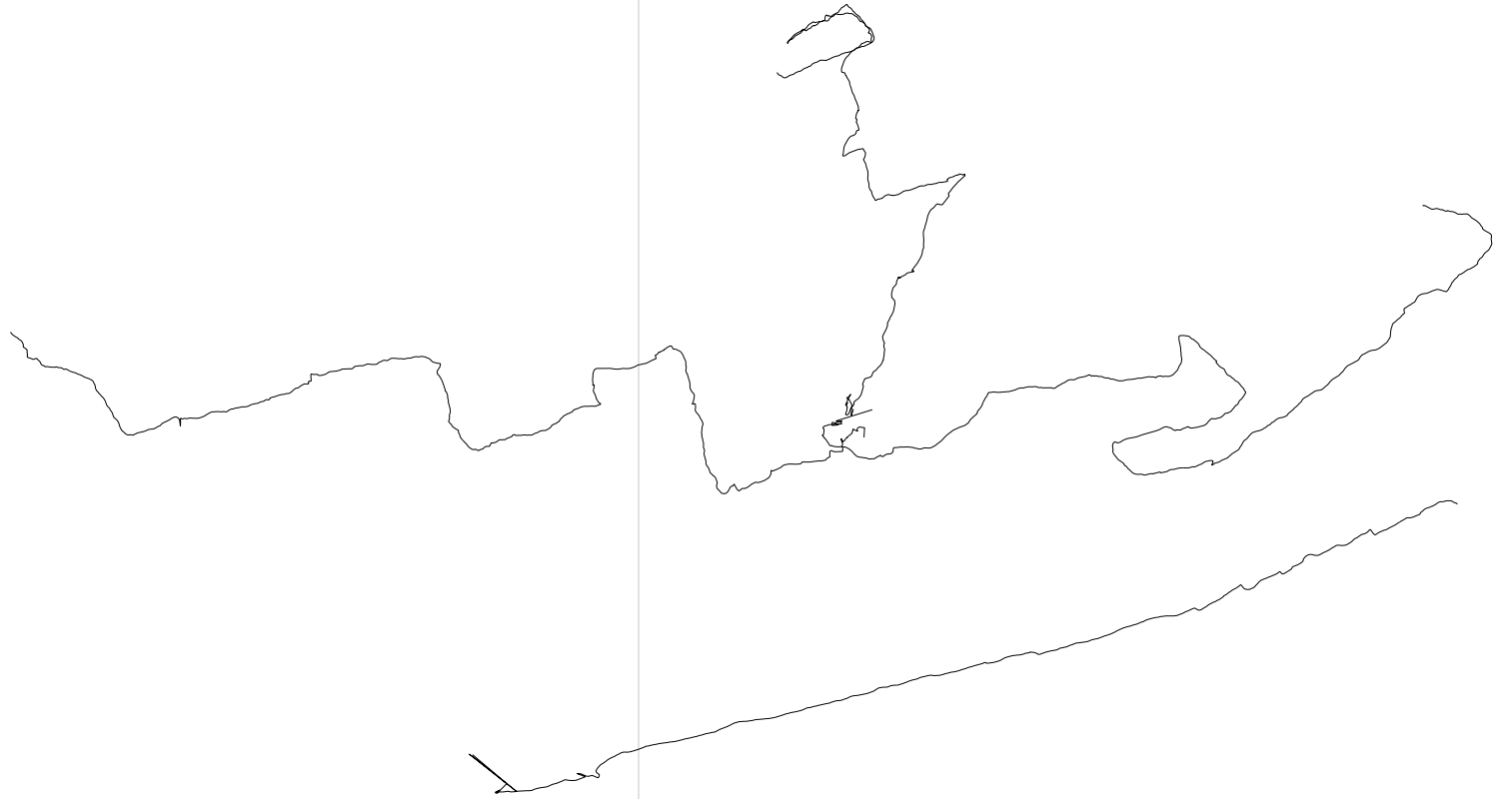
Dan Pyzer-Knapp  
Kerstin Plain  
Sam Gills



### ***Measured Time II***

On day two, the same principle was applied. Team members chose a different starting point, but walked the same distance in time that was established by walking the Royal Mile. In this way the Royal Mile was retained as a temporal scale bar.

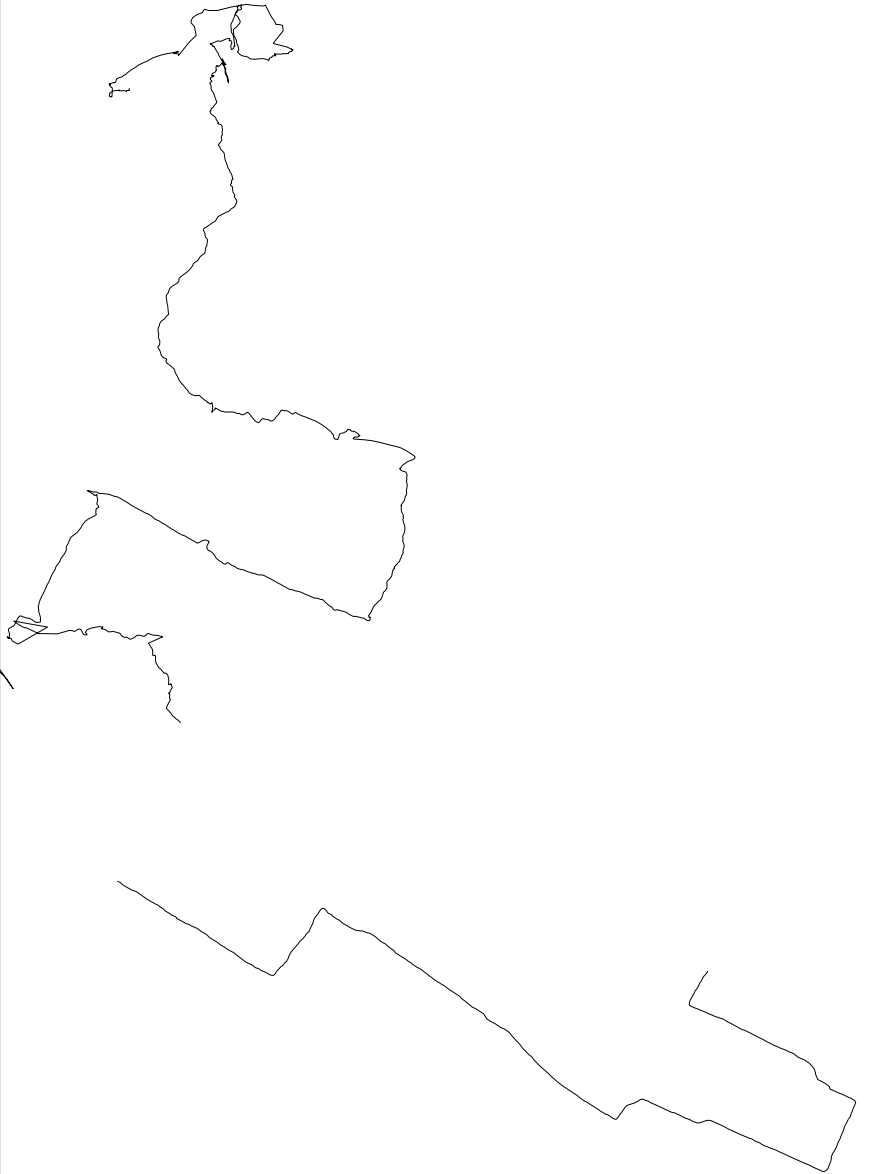
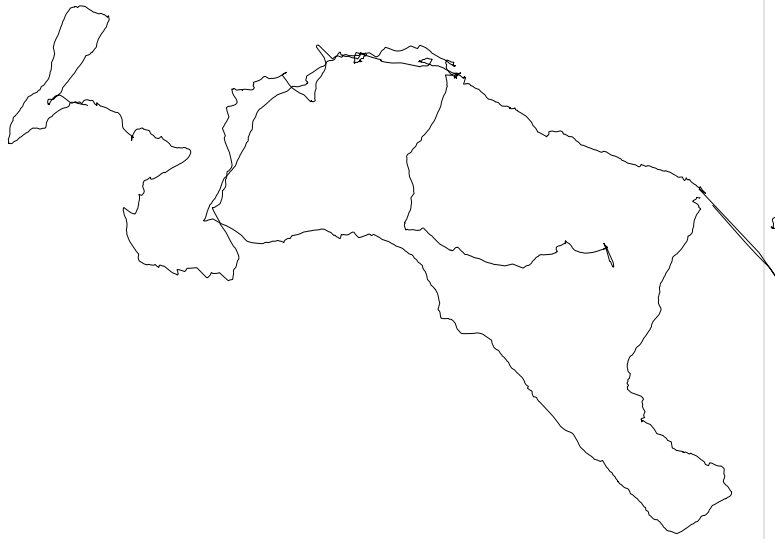
Dan Pyzer-Knapp  
Kerstin Plain  
Sam Gills



### *Human SatNav*

A SatNav has no identity or physical link to its surroundings yet we follow it blindly to our destination. Transposing the non identity that the SatNav has into a Human Controller that commands members of the group to follow directions by text without knowing where the members were. The same directions were given at the same points in time to create these trails that are the same path taken in different directions of the city.

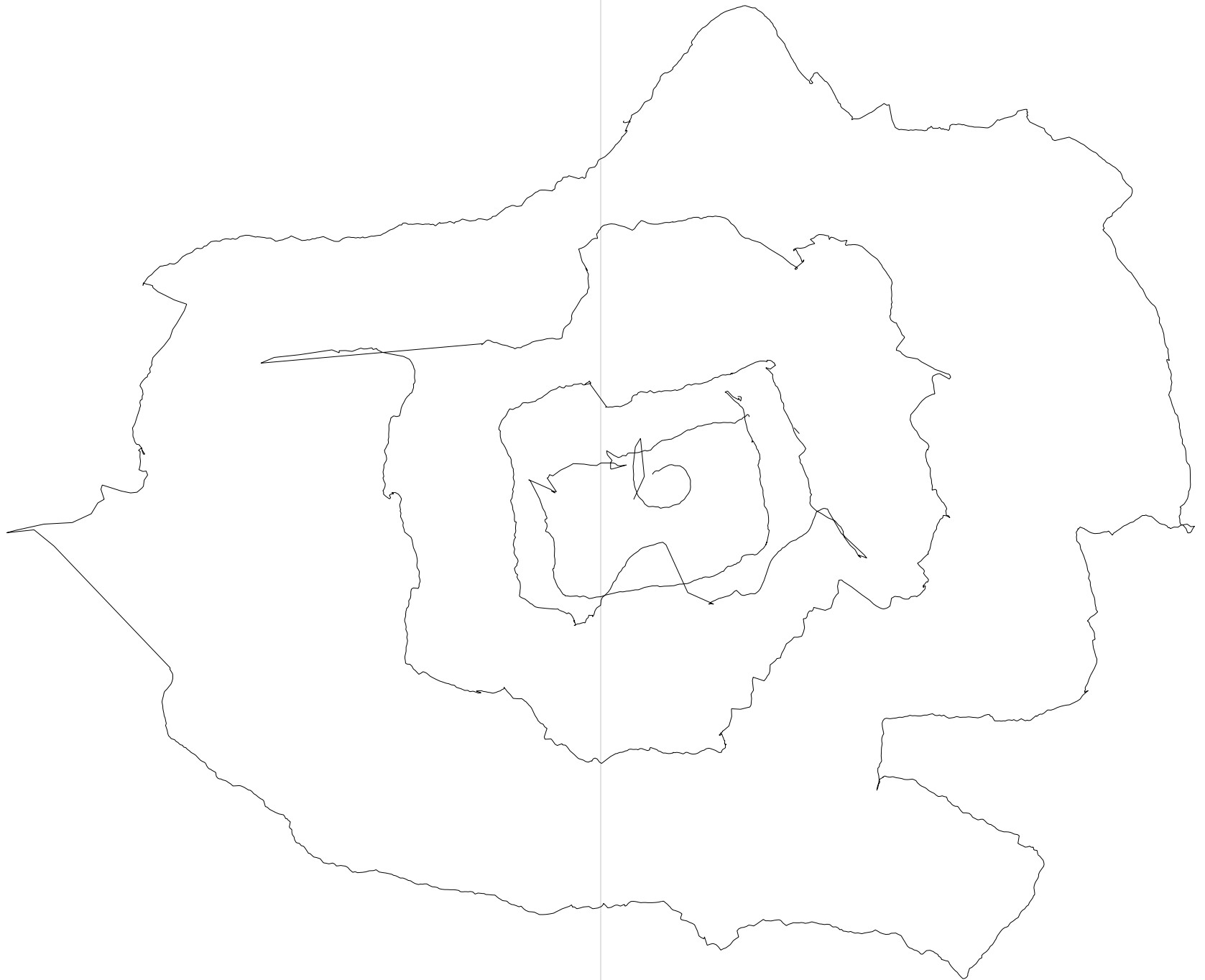
Marcus Rothnie  
Ross Simpson  
David Blair  
Marc Little



***Get Tired I***

This project was based on the idea of spirals. The group took a paper map of Edinburgh and drew concentric circles over it. Using a gps device, these circles were traced in physicality as best they could be. The inevitable interaction with obstacles including buildings and topography can be seen in the resulting image.

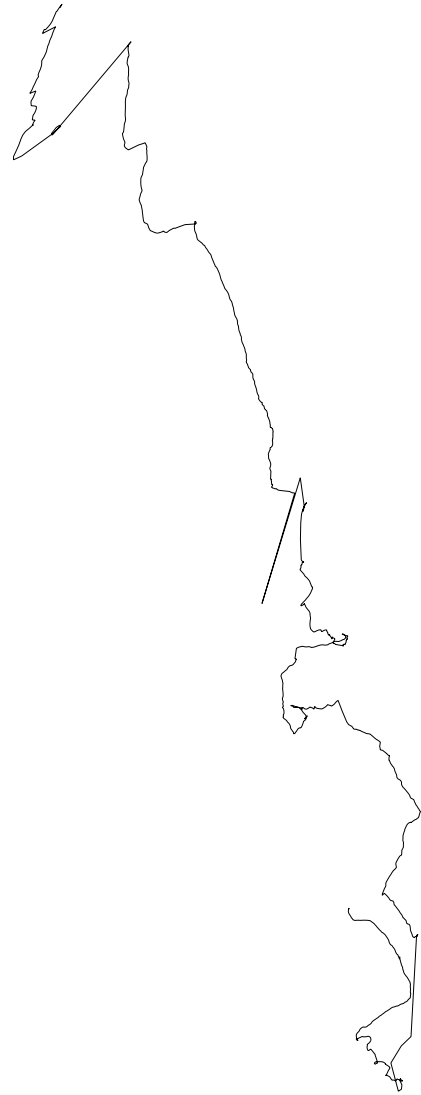
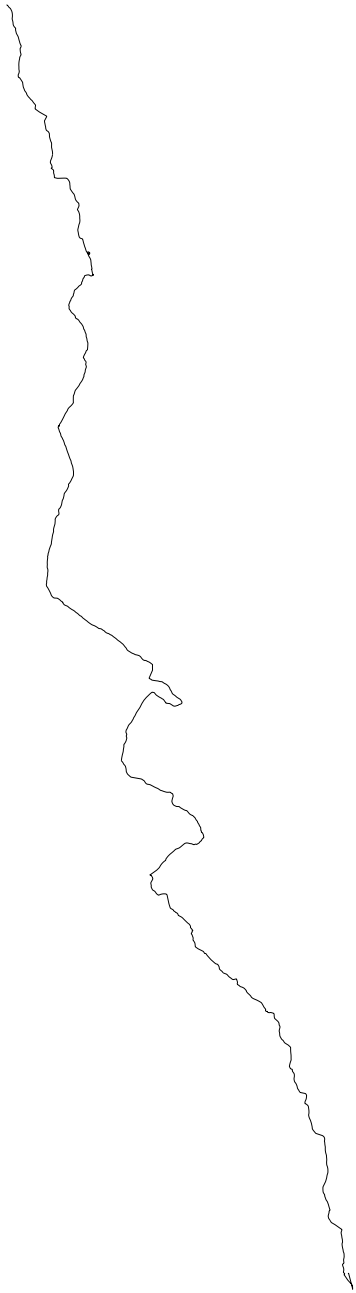
Atanaska Foteva  
Zuzana Tabackova  
Isabel Sandeman



***Get Tired II***

The second drawing expands on the idea of how built form and street patterns can affect routes. This time a route following a perfectly straight line from the Old Town of Edinburgh to the New Town was attempted and mapped.

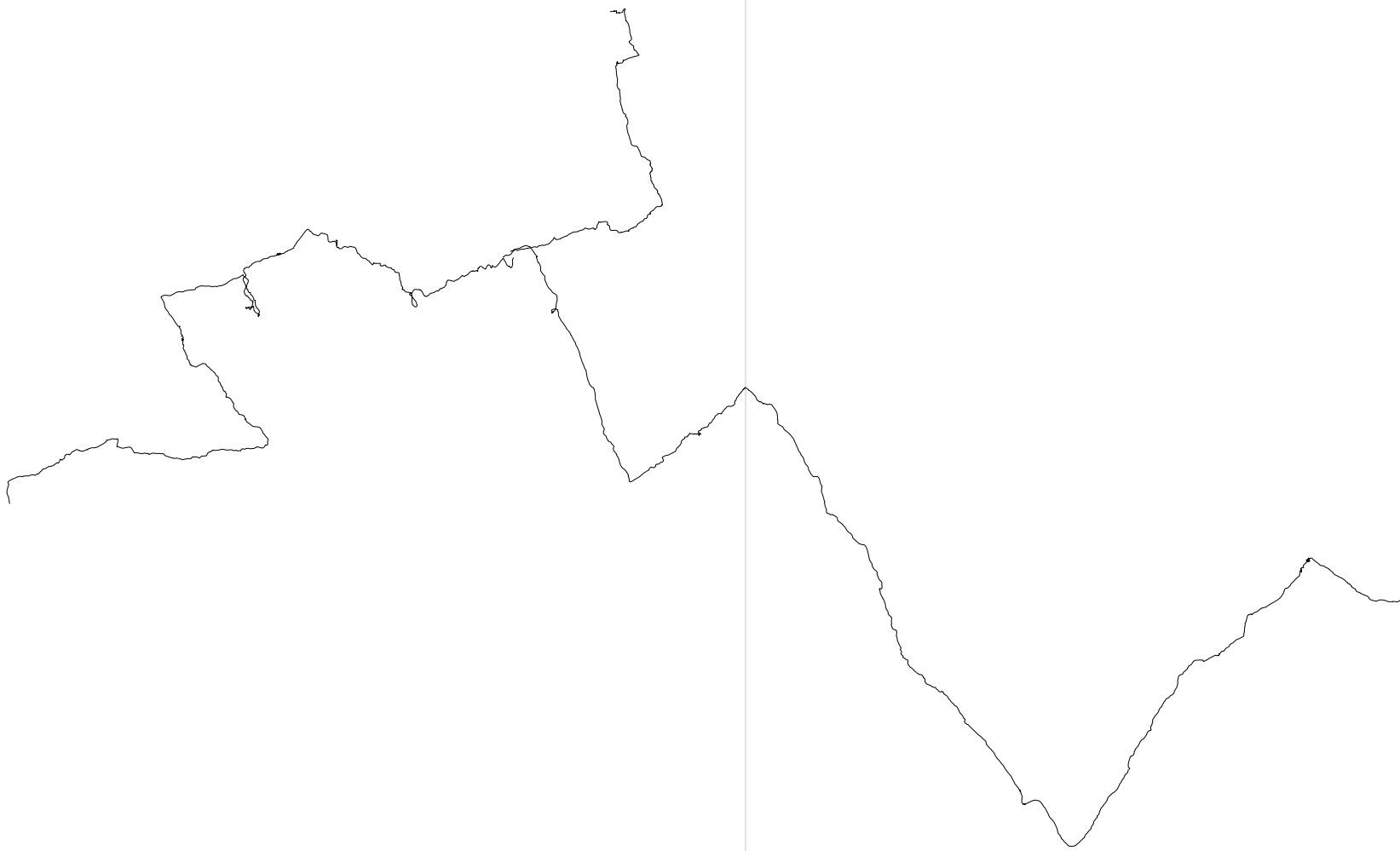
Atanaska Foteva  
Zuzana Tabackova  
Isabel Sandeman



***Reversed Home***

We listed the directions that we take on our way from home to University and used them to instruct our directions for walking home. Left became right and right became left.

Esther Frimpong  
Thomas Henderson Schwartz  
George Shiangoli  
Jess Rees



### ***Explosion***

The team members developed a simple rule: see how far away you could get from the same spot in Edinburgh, in the same amount of time using different modes of transport.

The team gave themselves 30 minutes and used walking, bus and car.

Ana Alonso Albarracin  
Eleanor Bloomfield  
Rose Botfield  
Fergus  
Sophie  
Zena Moore  
Samya Kako

○

### ***Hare and Hounds***

Hare and Hounds is a racing game played outdoors (best played within a wood or even a shrubbery maze) with any number of players. At the start of the game, one person is designated the 'hare' and everyone else in the group are the 'hounds'. The 'hare' starts off ahead of everyone else leaving behind themselves a trail of paper shreds (or chalk marks in an urban environment) which represents the scent of the hare. Just as scent is carried on the wind, so too are the bits of paper, sometimes making for a difficult game.

After some designated time, the hounds must chase after the hare and attempt to catch them before they reach the ending point of the race. It is generally done over a long distance, but shorter courses can be set. If the hare makes it to the finish line, they get to choose the next hare, or to be the hare themselves. Similarly, the person who catches the hare gets to choose the next hare.

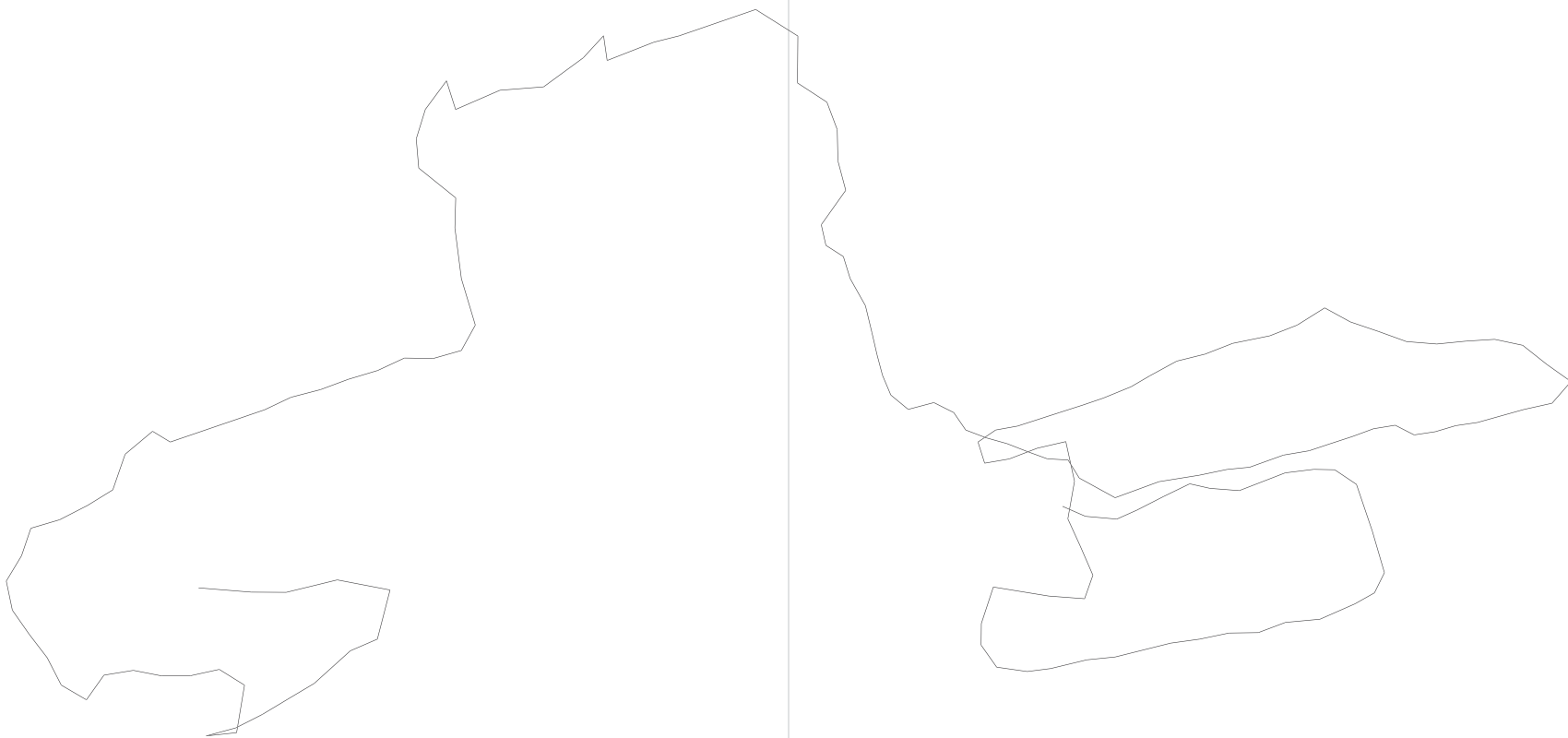
Callum Bolger  
Cashel Brown  
Duncan Robertson  
Jamie Prendergast  
Susie Boreham  
Cathy Yarwood  
Olle Blomquest  
Jonas Hamar  
Sophie Crocker



### *New Town-Old Time Spiral*

Creation of a spiral through the Old Town and New Town of Edinburgh. Start from the Missoni Hotel. Walk to the first junction, turn right, walk two junctions, turn right, walk three...and so on. On the route for seven junctions, we found ourselves entering the New Town. At this point we began turning left and reducing the number of junctions. Sometimes, we would reach the end of a road and be forced to turn a particular way. In this case, we always chose the direction opposite to the one our program was trying to lead us on. Edinburgh's morphology turned our intention of a spiral into a confused tangle.

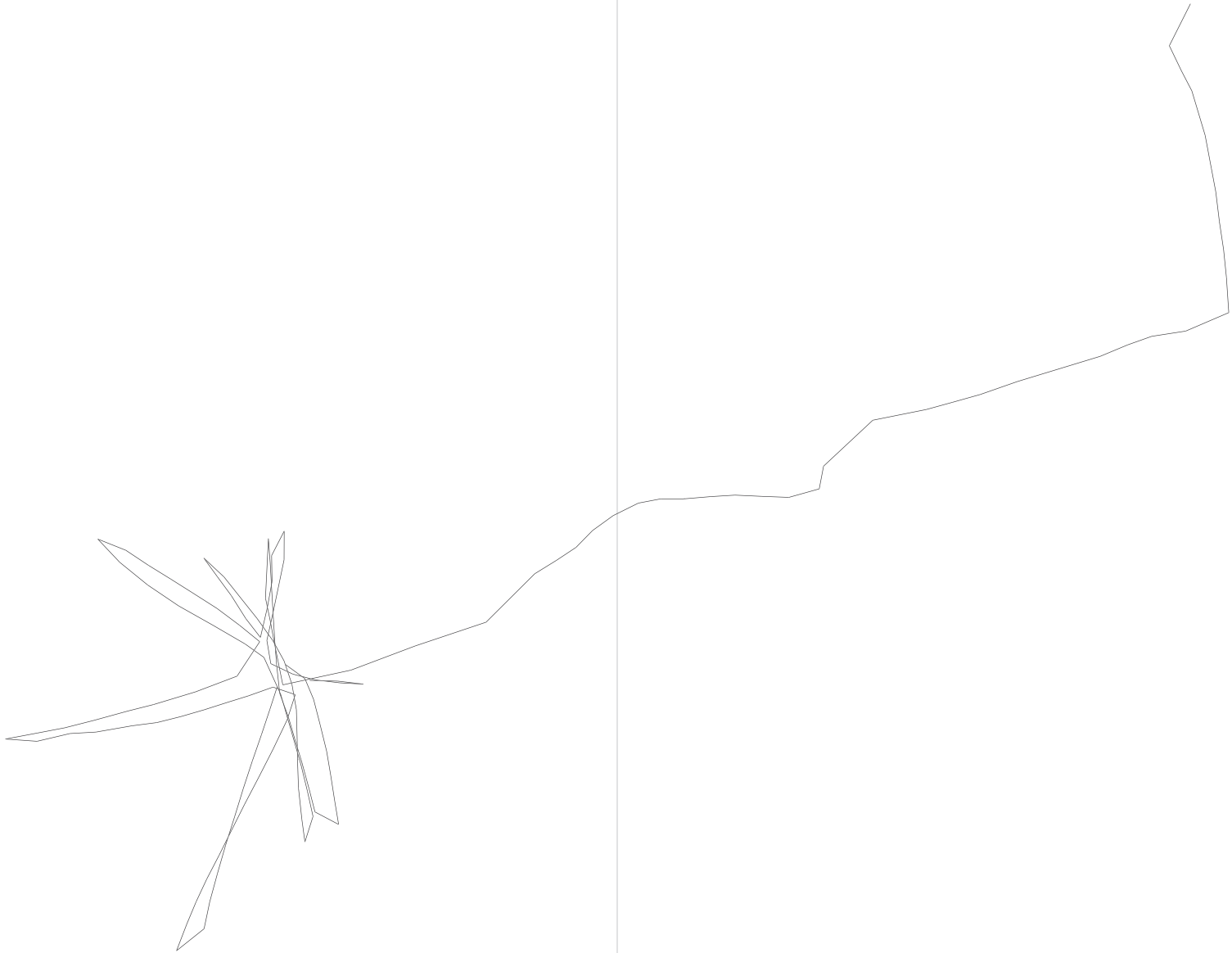
Claire Jones  
Luma Ifram  
Nicola Grant  
Robert Hebblethwaite

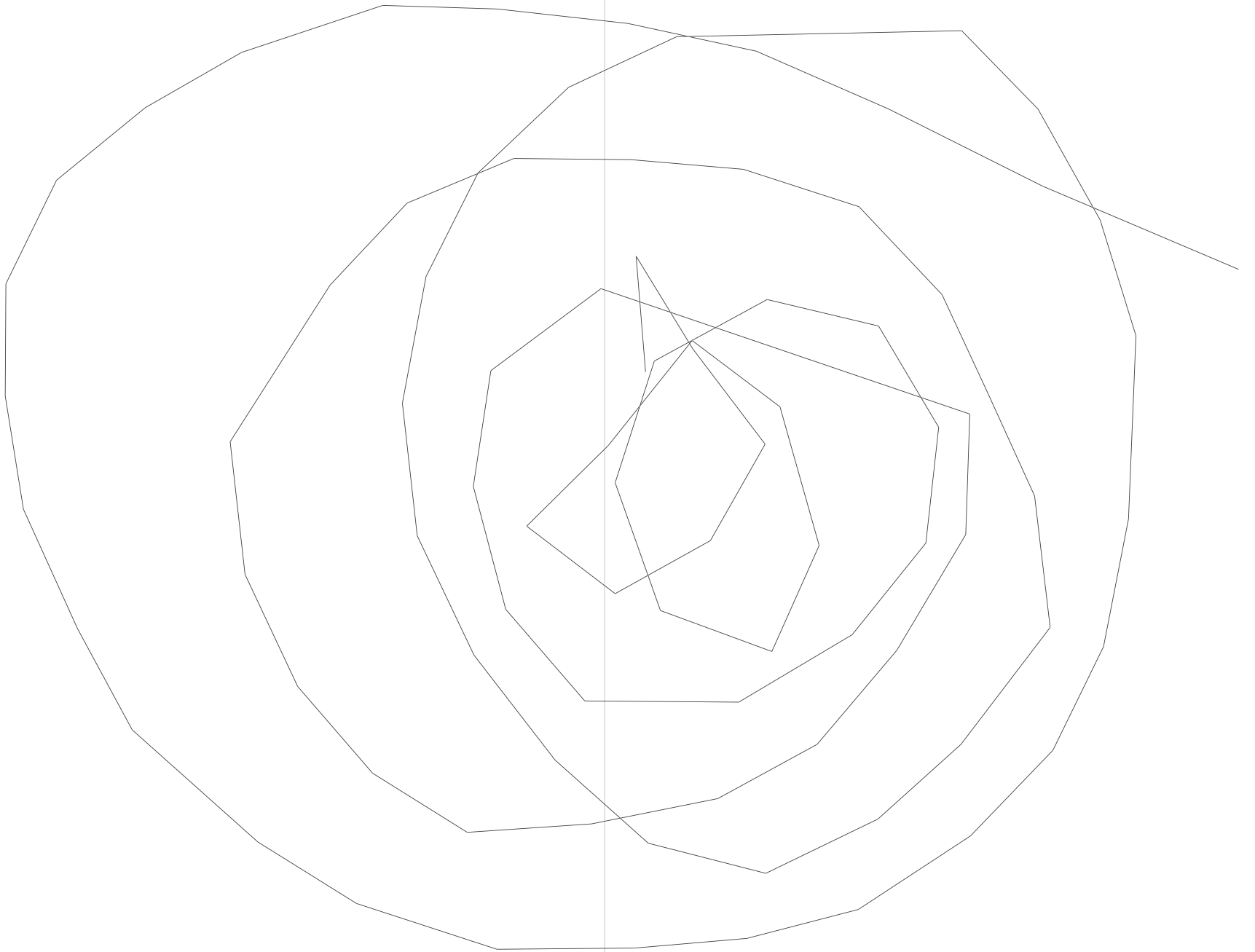


### *Flower & Spiral*

Just for fun! A group of students walked to the large public park in Edinburgh known as The Meadows and drew two shapes: a flower and a spiral.

Whilst the Flower was drawn by guesswork, the Spiral was drawn by tying a single piece of rope tied to a member of the team. Another member of the team proceeded to walk around them, slowly making a spiral. Once the rope had reached its limit, the process was repeated, walking back to the team member in the middle.





### ***Stalker***

By stalking random people from Waverley Station, we were able to trace their unpredictable route and imagine a narrative of their everyday lives.

“Widowed middle class man kidnappes his best friends daughter. He looks suspiciously around and finds his hiding place at the Standing Order - a place for family to eat.”

“Journey of a sportsman or a fitness guy that travel from Waverley station and ended up at Ocean Terminal Center for health food in a store, possibly to the Edinburgh Newhaven Harbour Gym in the end?”

“Hooligan with purple bag who on a transit at Waverley went shopping for rough clothes at the Princess Street Mall, preparing for tonights game/fight in Glasgow.”

“Reckless business man rushing towards his office desk and a sexy secretary, crossing the streets on red lights, ignoring both charity workers and beggars.”

“Arty female student in desperate need for wee and new knowledge, finding both at the National Library of Scotland.”

“A furious young boy on the run, after his mother found him smoking weed. His only option was to take the next train to Edinburgh, in order to escape into the National Library.”

“Slightly shabby man in a blue coat, meeting a fellow AA at the corner shop - then anonymously blending in with other politicians at the Parliament.”

“A typical business man in a long jacket with a business bag”

Sigurd Strom Norsterud  
Camille Tan  
Leonie Neuweger  
Patrycja Stal  
April Xiaoxi Chan  
Johnny Wang Ka Fai  
Childress Zhang  
Jens Walter



***Routines***

As architecture students we feel that our whole life is spent in the studio - apart from the daily trip to Tesco for food! We wanted to see if our non-architecture friends have as much fun as we imagine!

Sophie Abrahams  
Michael Chisholm  
Aideen Herron



Thanks to Esther for enthusing us all, Jane for setting the whole thing up, Karlyn and Ross for helping to organise the students and Liam for listening and taking on board these ideas between studio projects. And of course to the students who took part, despite the rain and the glitches in technology.