LE

LAURENCE ELSDON

CONTACT

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SKILLS

SOFTWARE DEVELOPMENT / BACKEND
C#, .NET, Revit API, Hypar Elements, GeneticSharp, Blazor, WebSockets, SignalR, View Extensions for Dynamo, Forge Design Automation

SOFTWARE DEVELOPMENT / FRONTEND
JavaScript, Three.js, Blazor, Hugo, React, AngularJS

VISUAL PROGRAMMING
Dynamo, Refinery, Generative Design, Grasshopper

CONCEPTS / COMPUTATIONAL DESIGN
Genetic Algorithms, Generative Design, Single Objective Optimisation, Agile, Test Driven Development, BPMN Version Control, SQL, NoSQL, Geometry

CONCEPTS / AEC
Modular Construction, DfMA, Offsite Manufacture, Architecture, Masterplanning, Planning Regulations, Residential Design, Fire Strategies, Detailing, BIM

SYSTEMS ADMINISTRATION
CI/CD, Docker, AWS, S3, CloudFront, EC2, CloudFlare, DigitalOcean, OVH, Traefik, Nginx, Azure Pipelines, GitHub Actions, CLI, Bash, Shell, Cloud, Bare Metal

CAD / BIM
Revit, AutoCAD, FormIt, 3ds Max, Rhino, Autodesk

GRAPHICS
Photoshop, InDesign, Illustrator, Affinity Publisher

RELEVANT EXPERIENCE

GEOMETRICIAN / APRIL 2022 - PRESENT

Currently developing an open source application to execute and visualise the results of geometric workflows using Hypar's Elements library. The application can run client-side directly in the browser using Blazor WebAssembly, server-side with Blazor Server, or via command line interface for execution in a Docker or cloud computing environment.
Developed a collection of modular libraries adding capabilities to Hypar's Elements library for:
- Automation of SVG and PDF drawings.
- Distribution of 2D and 3D elements with a flexbox inspired API.
- Hermite and other interpolated splines.
- Planned - automation of dimensioning
      - semi-automation of rural residential masterplans using splines for organic, non-rectilinear layouts

MATTERLAB / JULY 2020 - APRIL 2022

- Developed a Revit add-in to fully automate the production and dimensioning of fabrication drawings for a leading modular homes manufacturer. The wider application went on to receive the Digital Construction Award at the Building Awards 2021.
- Developed a workflow for a global construction contractor to optimally distribute modular, precast concrete slabs within a set of complex constraints. The genetic algorithm developed with GeneticSharp was part of a pilot program to develop content for KOPE - matterlab's Kit of Parts Engine for offsite manufacture.
- Developed a KOPE workflow for a leading US construction contractor to optimally layout residential units using their innovative vertical manufacturing approach.
- Developed generic toolkits using Hypar's Elements library to speed up the development of KOPE workflows.
- Developed a Revit add-in for a global architecture practice to reduce the risk of data loss.
- Added new features and resolved issues in the Dynamo source code for the Dynamo team at Autodesk.
- Developed an exemplar plugin to showcase the capabilities of FormIt's API for the FormIt team at Autodesk.
- Consulted on behalf of Autodesk Consulting for the development of a Revit add-in to automate the dimensioning of precast concrete slab fabrication drawings for a leading contractor.

ARCADIS / JANUARY 2019 - JANUARY 2020

Developed Dynamo and Grasshopper workflows for the delivery of early stage capacity studies and masterplans for precision offsite manufactured modular housing in both urban and rural contexts.

FEILDEN + MAWSON / SEPTEMBER 2017 - JANUARY 2019

Stage 3 and 4 experience as a part II architectural assistant on residential projects between £8 million and £50 million.

RHWL ARCHITECTS (NOW AEDAS) / SEPTEMBER 2013 - SEPTEMBER 2014

Stage 0 and 4 experience as a part I architectural assistant on residential and hospitality projects up to £250 million.

ADEPT DESIGN / NOVEMBER 2009 - JULY 2010

Designed and developed websites for notable charities at a design agency in Norfolk.

ACHIEVEMENTS

VISUAL DIFF / JULY 2019

Awarded second place at the Dynamo and Generative Design Hackathon in Toronto. Developed with Michael van Telgen and Robert Wood - Visual Diff is a view extension for Dynamo to visually compare the differences between two Dynamo Graphs to improve collaborative workflows in visual programming.

BINOCULARS / APRIL 2019

Awarded first place at the Dynamo and Generative Design Hackathon in London. Developed with Caoimhe Loftus, Deyan Nenov, and Wayne Dalton - Binoculars is a view extension for Dynamo that records the use of scripts and graphs providing your organisation or design practice insight into the use of Dynamo in your computational design workflows.

GRAPHING THE CITY / JANUARY 2017

Distinction (Exemplary) for my master's dissertation in which I developed an application to diagrammatically reduce the places of interest within a city to an identity graph. I then analysed the graph using graph theoretic social network analysis to quantitatively and objectively explore the commonalities and unique elements of a city's architectural identity.

EDUCATION

MASTER OF ARCHITECTURE / SEPTEMBER 2015 - JUNE 2017
NORTHUMBRIA UNIVERSITY   Distinction

ARCHITECTURE BA (HONS) / SEPTEMBER 2010 - JUNE 2013
NORTHUMBRIA UNIVERSITY   Upper Second (2:1)