

# Development Data Automation Alpha Project Update



**Report prepared by the Greater London Authority**

GREATER  
**LONDON**  
AUTHORITY





## 1.0 Problem Statement

**It is difficult to find out what is happening in the planning process, what has consent, whether that is being built, and what impact that might have.**

In order to plan for the future, planning authorities need to be able to monitor the effectiveness of previous plans.

Local Planning Authorities and objectors are often required to present evidence to hearings, both for appeals against refusal of planning permission, and enquiries into other policy documents. Evidence presented is currently prepared by both parties independently. This results in inspectors spending significant time interrogating the veracity of evidence to establish which they find to be most robust before considering what conclusions may be reached. Citizens have no direct way to find out what is correct. A single point of truth would make the planning system more robust and dynamic and speed up the delivery of housing.

Gathering this evidence base is not currently a core part of the planning system, meaning that all planning authorities struggle to pull together an evidence base to support policy development and present accurate cases to defend appeal decisions.

There are many conflicting statements that report what parties perceive to be the truth regarding the delivery of housing through the planning system. However, in the absence of a single source of evidence it is difficult to fully comprehend, rebut, or address the housing challenge.

The absence of data also feeds into the work of the Hackitt review which identified a lack of data to support how we understand and risk profile of what is being built.

Existing efforts to monitor housing delivery in London impose heavy burdens on local authorities without producing a comprehensive or timely dataset.



Fig. 1 Examples of the national interest in this issue

## 2.0 Discovery Summary

The GLA launched a discovery project to understand the constraints on the effectiveness of the London Development Database in 2017. The initial motivation for this discovery was to understand how the data we receive could become more useful to feed the Infrastructure Mapping Application, a tool to assist infrastructure providers. The findings did however have had a wider impact.

The key findings were:

- LDD requires >50% of an FTE per borough to support.
- Most data is manually collected and entered into the LDD with only limited automation achieved in extracting information.
- Back Office Systems are often legacy systems used by boroughs for many years. The current systems used are business process led (albeit very generically) collecting information about the processing of a planning application and not designed for the purpose of collecting the level of data about development required for monitoring.
- The data needed for monitoring is available but is often buried in PDF documents, meaning it is difficult to access, analyse or rely upon for decision making purposes.
- The vast majority of required LDD data are not held in back office systems.
- Due to the manual nature of the work some authorities prioritise completing the LDD but others don't, which means that the quality of the current data set is limited.
- Data is only collected on limited types of planning applications, and only once permission has been granted, meaning that it does not give a full picture of the development proposals being considered.
- Due to the nature of the way the data is collected, only very limited information is collected about the developments being considered.
- The data can be between 12 and 18 months out of date.
- Generally there is a keenness for change within local authorities.

No discovery work was initially carried out with Plymouth, however their situation has similarities to the current experience of London's monitoring officers.

The current breakdown of back office systems in London we are working with are:

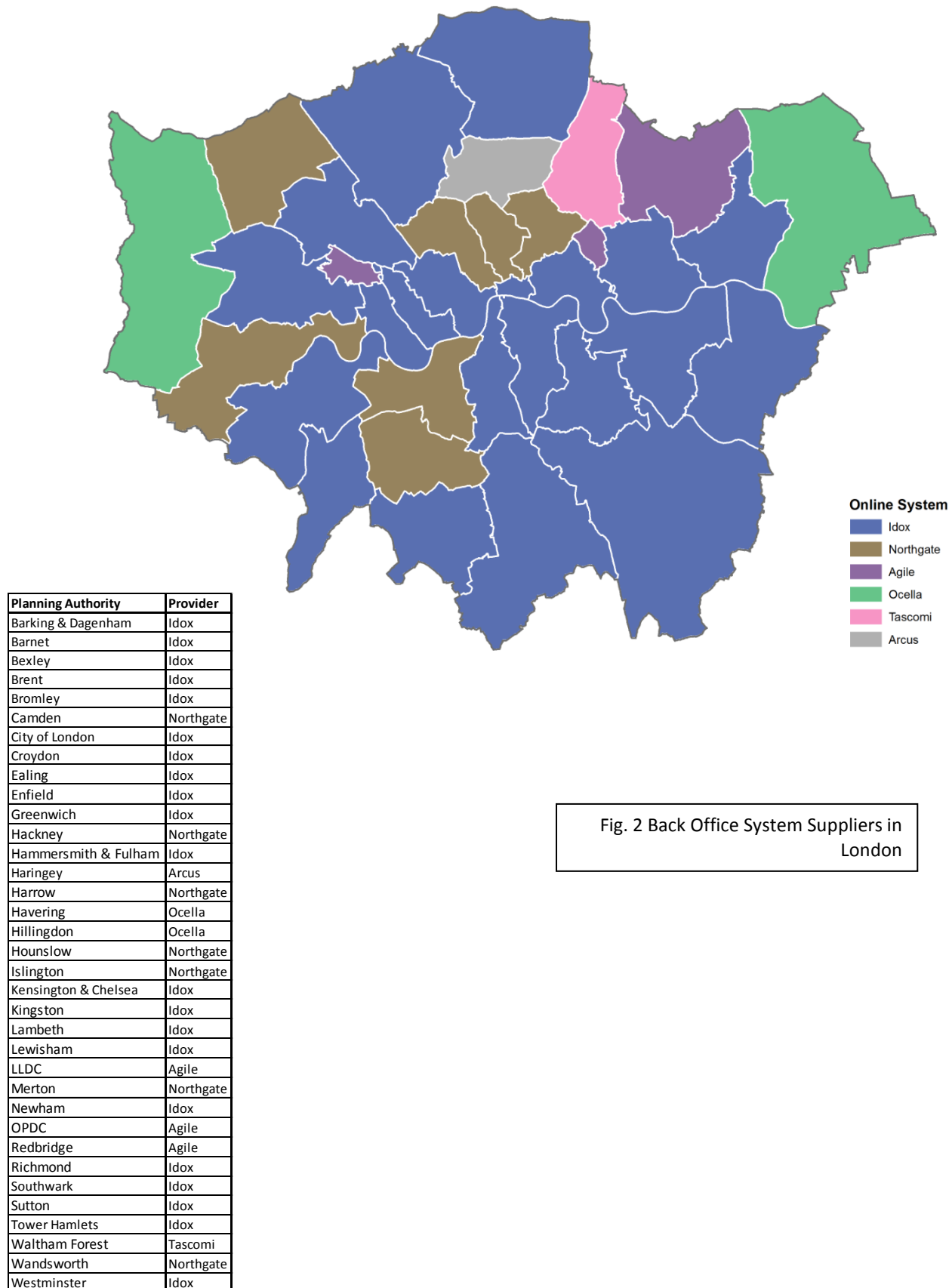


Fig. 2 Back Office System Suppliers in London

### 3.0 Joint Working

Through the expressions of interest in the Local Digital Fund projects, the Greater London Authority and Plymouth (as the leading authorities) began a joint project to begin exploring a solution to address the problem statement. Working together it was envisaged whatever solution was brought forward would have the potential to be expanded into a national solution.

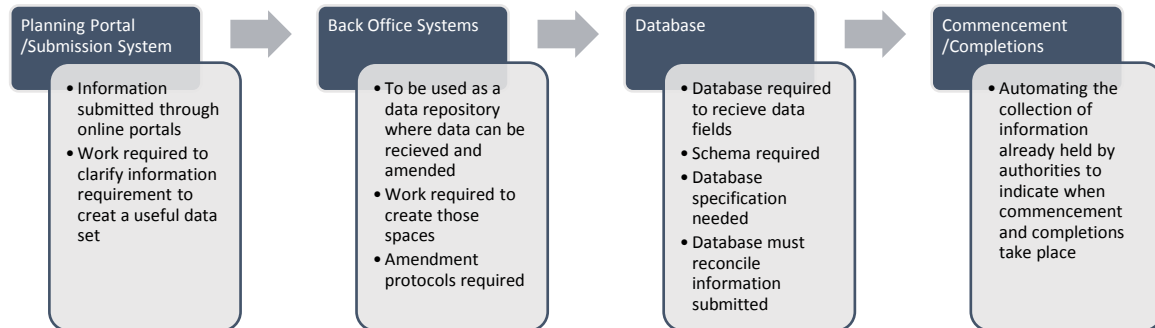
In addition to this partnership there are a number of others who are supporting the delivery of a single solution.

The context and driver for each of these groups is set out below.

| <b>London Context</b>  | <b>Plymouth, South Hams and West Devon Context</b>  |
|--|---|
| <ul style="list-style-type: none"><li>• <b>35 Planning Authorities (32 boroughs, City of London, and 2 Mayoral development Corporations)</b></li><li>• <b>London Plan currently being tested at EIP (potential adoption February 2020)</b></li><li>• <b>35 Local plans in different stages of adoption</b></li><li>• <b>Burgeoning plantech and proptech community</b></li><li>• <b>2004 London Development database still in use</b></li><li>• <b>7 Different Back Office Systems in Use</b></li><li>• <b>Flexible workforce requiring clear business processes</b></li><li>• <b>Intensive urban environment</b></li><li>• <b>Limited will for co-operation between organisations</b></li></ul> | <ul style="list-style-type: none"><li>• <b>Joint Local Plan nearing adoption</b></li><li>• <b>New jointly agreed policy positions needing monitoring</b></li><li>• <b>2 Different back office systems</b></li><li>• <b>Varying levels of capacity in the service</b></li><li>• <b>Mixed urban and rural areas</b></li><li>• <b>Strong working relationships (including joint management)</b></li><li>• <b>Monitoring carried out manually by two teams</b></li><li>• <b>Staffing Consistent</b></li><li>• <b>Difficulties in IT infrastructure to share information</b></li></ul> |

## 4.0 Initial Vision

When we set out, we began with a hypothesis based on our original discovery work and user research that a potential solution could look like:



As we started to engage with our wide array of users, we identified core areas of work required:

1. Information Requirements – Identifying what information should be submitted as part of a planning application
2. Technology needs – including the need for tools that support the collection of information about development proposals rather than the DM process
3. Data Quality – Concerns about ensuring the data is accurate and complete
4. Accessibility – All data needs to be available if it is to be effective



## 5.0 User Stories

To begin the process and guide our alpha development, we needed to learn from our users to develop clear user stories.

In addition to extensive bilateral conversations, Plymouth and the GLA hosted a user personas and requirements event. In attendance were representatives of all parties who give and receive the data, back office system suppliers as well as infrastructure providers who are keen to access more usable data.



This work resulted in 4 key personas on which to base our development work. These personas went through iterations as we reflected with our user community and our knowledge improved. We continue to refine them as we engage.

Fig. 3 User Personas





#### GLA LDD Officer - Data Consumer

Experienced planning professional who is driven by the need to protect the public interest. Monitors borough compliance, identifies and flags anomalies, undertakes statutory reporting and responds to internal and external queries. Frustrated by the ability to assure data quality and the time taken to run bespoke queries.

Process



Tech



Policy



Commercial



#### Goals

- Accurately monitor development
- Assure data
- Identify outliers and anomalies
- Respond to queries

#### Frustrations

- System unable to adapt to change
- Local workarounds undermining accuracy
- Limited audit capability
- Time consuming
- Limited validation capability

#### Motivations

- Accuracy
- Reliability and Stability
- Efficiency
- Ease of use



#### Borough LDD Officer - Data Provider

Experienced local borough officer who is motivated to enhance the quality of life for local residents. Ensures that the LDD accurately reflects the state of planning within the borough. Key activities include: Providing information on decisions. Reconciling starts and completions. Ensuring local borough compliance. Responding to queries and resolving anomalies. Has detailed understanding of the root causes of inaccurate data and is proactive in developing local work arounds to identify and rectify these. Frustrated by the time taken to cross check, verify and upload data.

Process



Tech



Policy



Commercial



#### Goals

- Keep track of development
- Ensure data is accurately reflected in the LDD
- Resolve outliers and anomalies

#### Frustrations

- Labour intensive, particularly:
  - Superseded permissions
  - Net additions
  - Plot to Site level aggregation
- Time consuming to update
- Requirement to cross check and validate data
- Accessibility of supplementary data for verification

#### Motivations

- Accuracy
- Efficiency
- Ease of use



### Utility - 3rd party Data consumer

Statutory obligation to supply customers, manage risk and control cost. Gain insight into development certainty. Contribute to business planning and forward investment. Undertake growth forecasting. Understand pipeline and allocate resources accordingly.

Process



Tech



Policy



Commercial



#### Goals

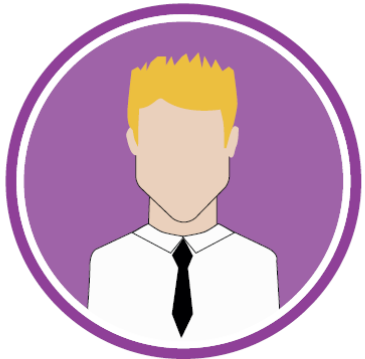
- Ensure asset base can adequately support growth
- Optimise investment
- Safeguard customer experience

#### Frustrations

- Can't confidently use LDD data
- Timeliness
- Completeness
- Accessibility of supplementary data
- Developer detail

#### Motivations

- Accuracy
- Quality
- Consistency



### Planning Policy - Data Consumer

Experienced planner who is motivated to enhance the quality of life for Londoners. Evaluates impacts of policy to measure progress. Requires accurate live data to create, support and monitor planning policy. Frustrated by the data provided often being difficult to interpret and having multiple caveats.

Process



Tech



Policy



Commercial



#### Goals

- Set policy consistent with the requirements of the London Plan
- Measure progress against the plan
- Evaluate policy impacts

#### Frustrations

- Pertinent information is not easily discoverable
- Lack of complete data due to current threshold
- Accuracy and confidence
- Interpretation and caveats

#### Motivations

- Accuracy and Quality
- Accessibility
- Exploit opportunity to gain insight
- Clarity

## **6.0 Relationship to Other Projects (Common Standards)**

At the same time as this project launched there are a number of other projects that have relationships to it.

In developing the alpha product we have developed key learning from working with the following projects:

### **1. My Society – Planning Register Project**

This is a discovery piece working for MHCLG to understand the potential opportunity to develop a single planning register for the UK.

#### **How this changed this project**

- (i) Additional Information Requirement to that set out in the Non Technical Data Standard. Now included in a combined Data Standard. These included:

- a. Consultation Dates
- b. Conditions

(Please see note below regarding the GLA's approach to developing a data standard for the purpose of the alpha stage.)

- (ii) The existence of this project and the move towards more open data has removed the fear of authorities of the use of APIs because most of their data will be open.

### **2. Housing Delivery Test – Planning Advisory Service (supported by AECOM)**

PAS have been instructed to support LPAs who are failing on Housing Delivery through the production of an action plan. Their interest is having the data presented in a way that enables annual analysis.

#### **How this changed this project**

- (i) Housing figures broken down by year in the Combined Data Standard
- (ii) A commitment to the data being accessible in particular ways when it is published
- (iii) Ongoing commitment to work together

### **3. MHCLG Planning Obligations**

This is a project focused on obtaining visibility and transparency for planning obligations.

Whilst there are directly relevant relationships to this project, that may create a framework for future information collection.

#### **4. Land Registry – LLC1 Automation**

This project is in Beta. It has provided an interesting insight in that the Land Registry are looking to access the same information as a live feed. They have achieved this through the implementation of an API and completed many of the same challenges we are facing.

##### **How this changed this project**

- (i) This enabled a focus on the use of APIs

#### **5. UnBoxed – Back Office System Discovery**

This project is reviewing the opportunity to replace back office systems. There is a synergy between the projects in that they are both looking at opportunities to centralise data sets to make them more useful.

The outcome of the project was a recommendation to consider a cloud based central data set for planning information, which would replace the need for this database.

The latest iteration of the GLA's database solution would facilitate a move towards that solution.

Fig.4 Table of relationship between projects when viewed as part of the planning process:

| Projects in this Sector              |  |   |          |                              |                   |
|--------------------------------------|--|---|----------|------------------------------|-------------------|
|                                      | Submission   | Processing  | Decision | Obligations and Restrictions | Whats being Built |
| LDD Automation                       |  |   |          |                              |                   |
| My Society Planning Register Project |  |   |          |                              |                   |
| PAS - Housing Delivery Test          |  |   |          |                              |                   |
| MHCLG Planning Obligations           |  |   |          |                              |                   |
| Land Registry LLC1 Automation        |  |   |          |                              |                   |
| Back Office Systems                  | Planning Portal<br>IAPPLY<br>WeareSnook<br>Northgate | IDOX, Northgate, APAS, Ocella, Tascomi and Arcus<br>NOT ENGAGED – DEFT and Civica |          | Exacom                       |                   |

## 7.0 Defining the information Standard

The GLA and Plymouth recognise that creating a fixed ‘data standard’ is near impossible in an environment that is constantly changing and where learning will continue. However, given the wide variety of projects at work in this space that all needed to fit together and support one another, it was important during this alpha stage to establish an initial standard we could all work to that would ensure alignment between our products.

In the spirit of developing a workable alpha, the GLA and London Boroughs first collected a list of data sets believed to be needed to monitor the effectiveness of the London Plan, Environmental Plan and to plan for infrastructure across the city.

That initial list is set out

[https://www.london.gov.uk/sites/default/files/updated\\_non\\_technical\\_planning\\_data\\_standard.pdf](https://www.london.gov.uk/sites/default/files/updated_non_technical_planning_data_standard.pdf)

After combining our work with the work of other projects, to ensure alignment, we have updated the list that now serves as the basis of the alpha product development

[https://www.london.gov.uk/sites/default/files/combined\\_planning\\_data\\_standard.pdf](https://www.london.gov.uk/sites/default/files/combined_planning_data_standard.pdf)

Finally, we have translated this into a technical document that provides the necessary information to back office providers and submission portals.













































[https://www.london.gov.uk/sites/default/files/combined\\_planning\\_technical\\_standard.pdf](https://www.london.gov.uk/sites/default/files/combined_planning_technical_standard.pdf)

## 8.0 Defining the Alpha

Core to developing the alpha product, we involved the full team in developing a MOSCOW review of the project based on substantial user interviews and events.

Early on, our conversations indicated that we would need to exclude Commencement and Completion information from the alpha product in order to deliver a minimum viable product within our timescales.

Fig.5. MOSCOW for ALPHA

| Activities  | Data Input   |   | Use  |   | Administer  |   | Key   |
|-------------|--|---|--|---|---|---|---|
| Tasks       | Ingestion  | Validation  | View/Access  | Analysis  | Modification  | Analysis  |   |
| Must Have   |  Consume a dataset from back office systems.<br> So the DID contains appropriate development data. |  Validate data from back office systems.<br> So the data in DID is complete and conforms to the standard.     |  Access historic LDD data.<br> To understand development trends.   |  Understand validity and completeness of the DID data.<br> To have confidence and avoid time spent checking.      |  Add or remove fields, ensuring flexibility.<br> So DID remains in line with changes in policy. |   |  Borough LDD Officer |
|             |  |   |  Ability to make simple data requests.<br> To answer specific queries in good time.  |  View developments as a polygon.<br> To run site and plot level spatial analysis.                                 |   |   |  GLA LDD Officer     |
|             |  |   |  Easily see and understand developments around me.<br> To feel more aware of what is going on around me and in a better position to comment. |  Access data easily.<br> To use the data in my research or to create a value-add application.                     |   |   |  Utility             |
| Should Have |  Automatically ingest data from the back office systems.<br> So DID data is real time.            |   |  Ability to create custom reports or views of the DID data.<br> To easily answer regular and reoccurring questions.                         |  Ability to overlay my own GIS data with DID data.<br> To bring in contextual data that is relevant to me.       |   |  Consider other data sources.<br> To save time determining development status.                                 |  Planning Policy    |
|             |  |   |  Understand the accuracy of each dataset.<br> To better inform policy.   |   |   |   |  Public            |
| Could Have  |  |  Apply intelligent validation on the data received from back office systems.<br> To flag inaccurate data. |  |  Use the DID data to assist with 5 year land supply monitoring.<br> To save time and provide consistency.     |   |  Flag overlapping sites to determine partial supersedence.<br> To identify and report partial supersedence. |  System            |
|             |  |   |  |  Use machine learning algorithms to forecast the impact of policy.<br> To better inform policy.               |   |   | <div>Who</div> <div>Wants</div>   |
|             |  |   |  |  Use twitter sentiment analysis to understand views about development case.<br> To measure public engagement. |   |   | <div>Why</div>  |



## 9.0 Structure of Alpha Product

We designed the structure of our alpha product in a truly agile manner – beginning with a set of hypotheses, and determining through testing with stakeholders that the initial design required significant rethinking to be successful. This pivot allowed us to arrive at a solution that recognised stakeholder constraints and still allowed us to serve our users and address our original problem statement effectively.

To deliver the alpha, the initial planned infrastructure is set out below:

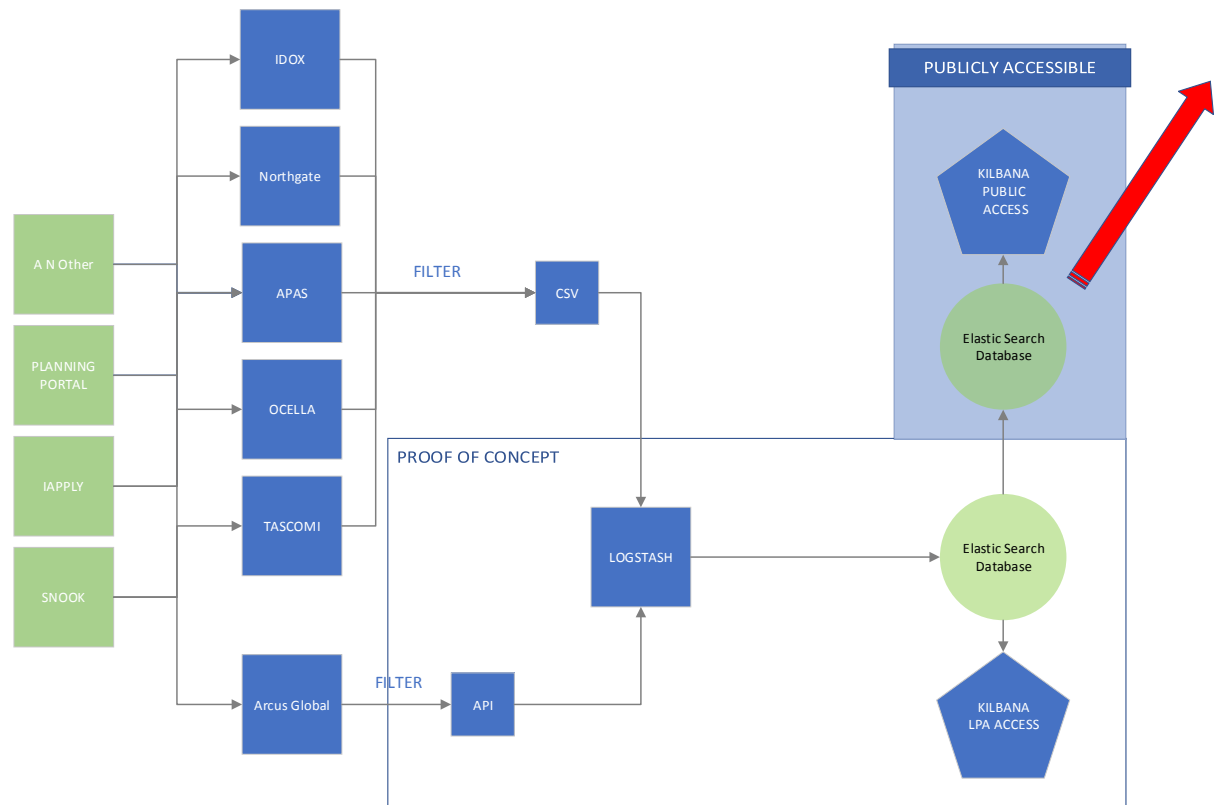


Fig. 6 Initial System Architecture

Once we started working with back office providers in earnest, however, it became clear that their constraints were at risk of holding back the project and it would therefore not be possible to deliver on time and with appropriate levels of flexibility. In light of this we needed to look at alternative solutions to collecting the data from the submission portals. After exploring a number of possibilities with our back office providers, we arrived at the following structure for our alpha product, which serves our users, produces the necessary dataset, and can be delivered within our timescales:

## The Pivoted Solution

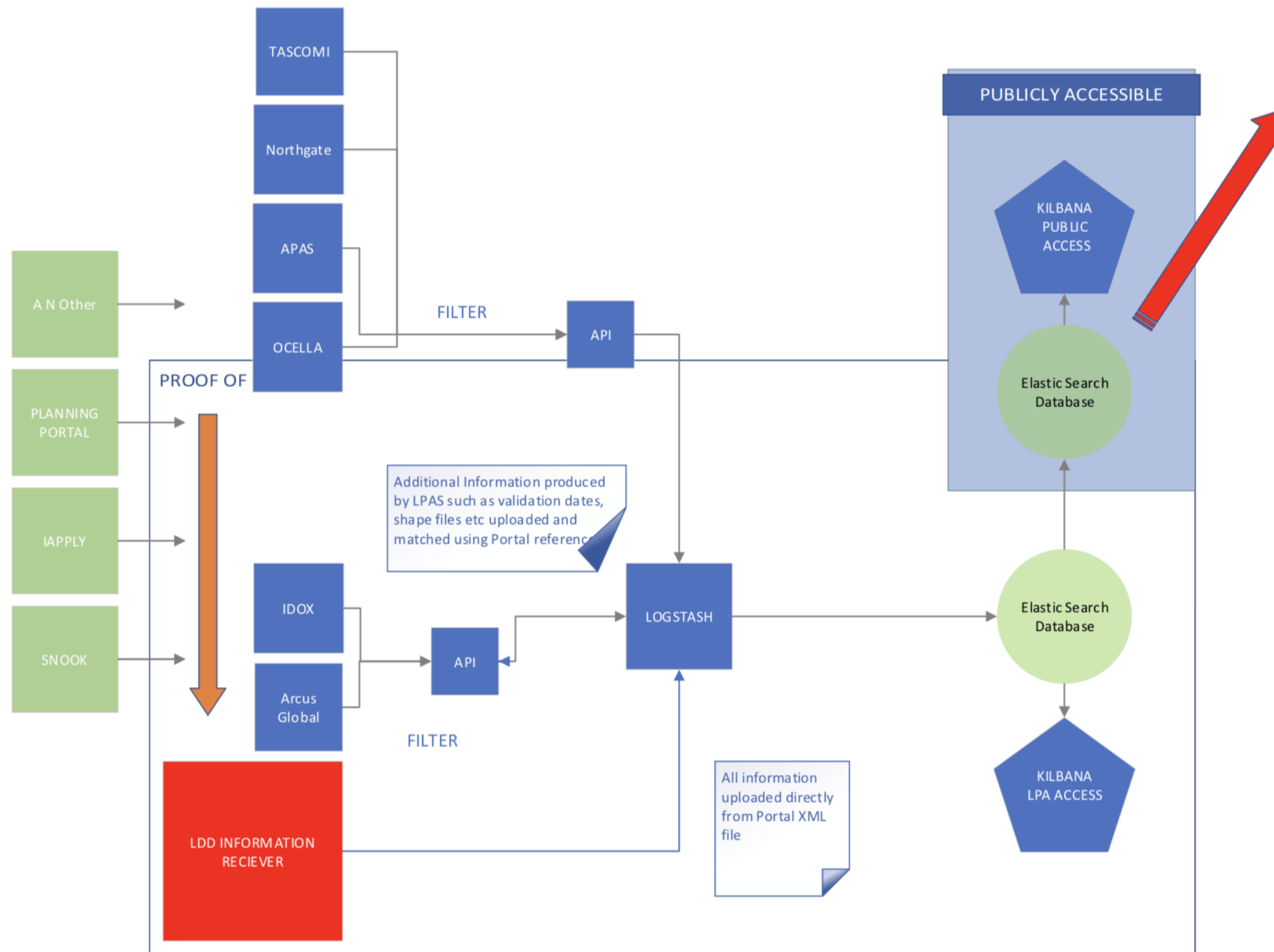


Fig 7. The amended System Architecture

## Explanation

The pivoted solution works on the following principles:

- The Submission system sends a copy of the planning application to an additional email address. This is an XML file which we have demonstrated can be constructed and deconstructed in a simple format. This means that the data is held in a central repository from the outset.
- To match up the information between the submission system and the back office system, it relies on the submission system reference number. This is held in all back office systems in use.
- The Back Office Systems require only limited update to include an API to extract the data that is produced by the LPA itself. This includes the date fields validation, amended description. We have demonstrated that in principle this mechanism of extracting live and changing data is possible using a similar mechanism to that used by the Land Registry.
- Amendments to any planning applications will need to be submitted through the application submission system previously used (albeit it description and date amendments will come through the back office systems)
- The links between the applications will be carried out using spatial polygon information (as well as UPRN)

The challenges with the pivoted solution include:

- Limited ability for LPAs to amend the information (so further work will be required on this)
- Reliant on a continued data extract from the LPAs

The product is being developed with ongoing testing at stages throughout the delivery to avoid arriving at the end of the process and realizing the system does not serve users.

## **Return to unpivoted solution**

Provided this alpha is successful, as each authority re-procures its back-office systems information requirements will be included in their back office systems. This will enable a return to the original solution with data passing through the back office system in each borough enabling local alteration and correction.

## **10.0 Key Challenges Remaining**

There are still some key challenges:

1. Commencement and Completion Monitoring – this has fallen outside of the MVP and will be treated as a separate project
2. Data Matching – Data needs to be matched for a number of purposes, and we will need to develop tools to ensure nothing is missed. This is outside of the MVP.
3. Data Quality – this has fallen outside of the MVP however one of the big challenges on the back of this project will be work around identifying indicators that consistently demonstrate poor data quality.
4. Data Transfer – we are working with boroughs to build a framework to capture the missing data, this will need to be borough led and may be resource hungry

## **11.0 Timetabling of Completion of Alpha Product**

The course of this project was impacted when it became apparent the number of additional projects that we would need to align with, particularly those funded by MHCLG's Local Digital Fund. As a result, we devoted additional time to alignment, particularly around the alpha data standard. This has meant that our product is still in development, with a working alpha now intended to be available during the second week in July.

We updated MHCLG on these conversations and choices to prioritise alignment, as well as the timing, throughout the course of the project.

## **12.0 Conclusion:**

We propose providing an additional document once the alpha system is live and the ongoing testing has concluded that lays out our proposal for a beta product.

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