

Transforming Asset Condition Assessments with FME Tools

2025 Locus FME Roadshow



Taryn Smith

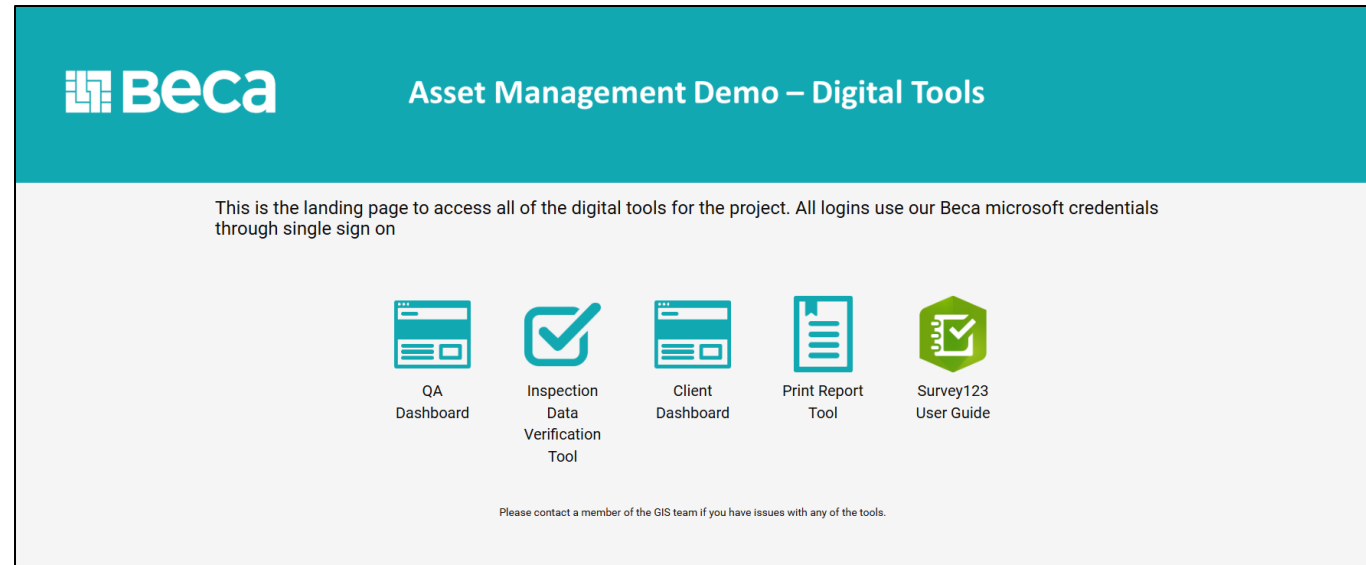
GIS Analyst

FME Certified Professional

#makeeverydaybetter

Asset Management Workflow Example

- Streamlining asset condition inspections of building services, structures and architectural components across sites.



Tool 1: ArcGIS License Transfer

User Summary		
Full Name	License Type	Email
Amrit Singh	Field Worker	Amrit.Singh@beca.com
Catherine Domoniko	Field Worker	Catherine.Domoniko@beca.com
Gareth Guitry	Field Worker	Gareth.Guitry@beca.com
Isabella Finan-Jenkin	Field Worker	Isabella.Finan-Jenkin@beca.com
Isabella Vesty	Field Worker	Isabella.Vesty@beca.com
Jemma Arctus	Field Worker	Jemma.Arctus@beca.com
Mark Hill	Field Worker	

- FME Flow workspace app accessed by project team
- Display a summary of users and assigned licenses
- Collect user parameters to swap licenses

FME Flow

Transfer license between Assets ArcGIS Users

The list above shows the current licensed users and which license type they currently hold.
To transfer a license, please copy and paste the email of the user you wish to take the license from and enter the email of the user that you will transfer the license to.

Please ensure you are not removing a license from someone that is currently using it on site, it will be removed from them without warning.

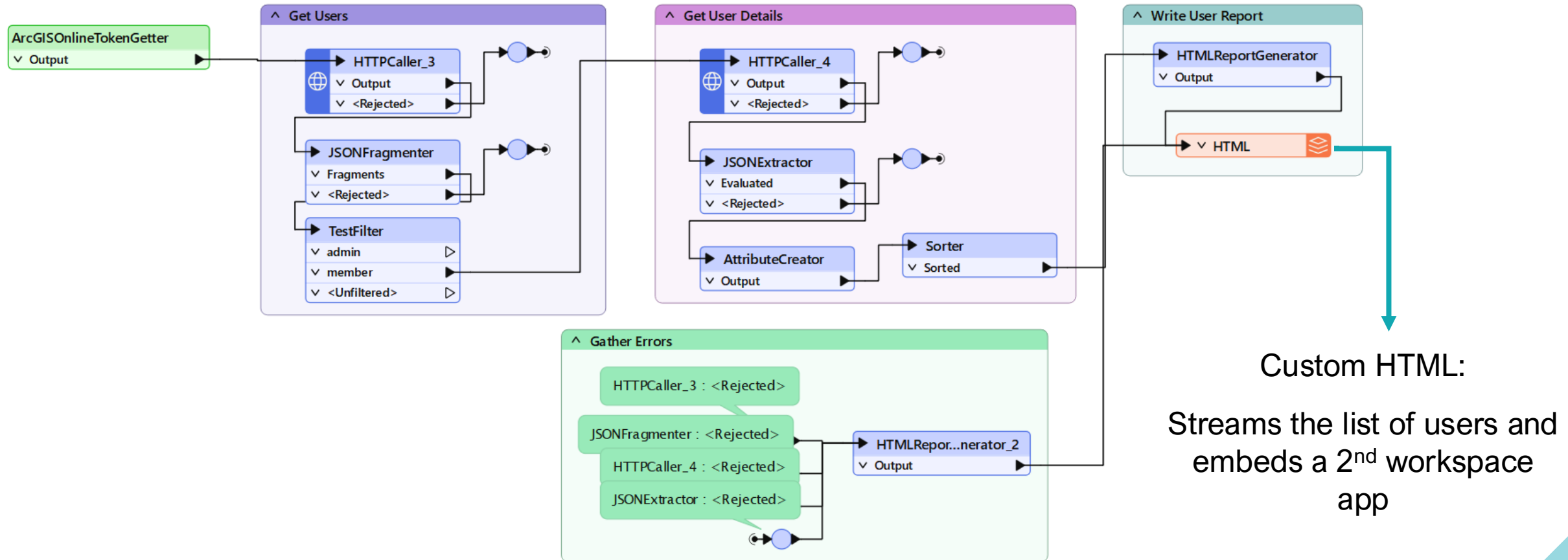
User Email to remove license from/swap license with (optional)

User Email to give license to (optional)

Run

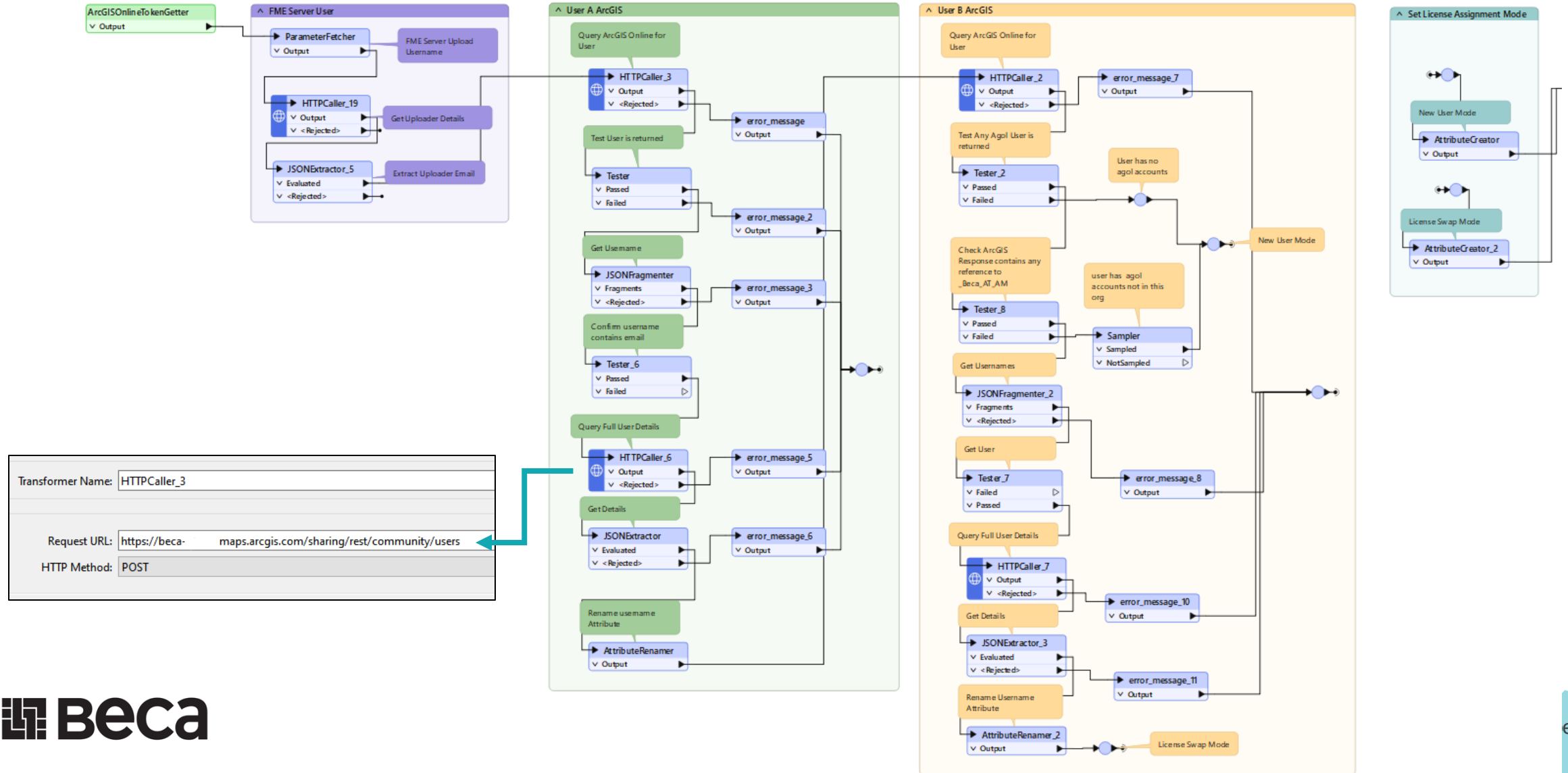
Tool 1: ArcGIS License Transfer

- Behind the scenes – FME Workbench 1



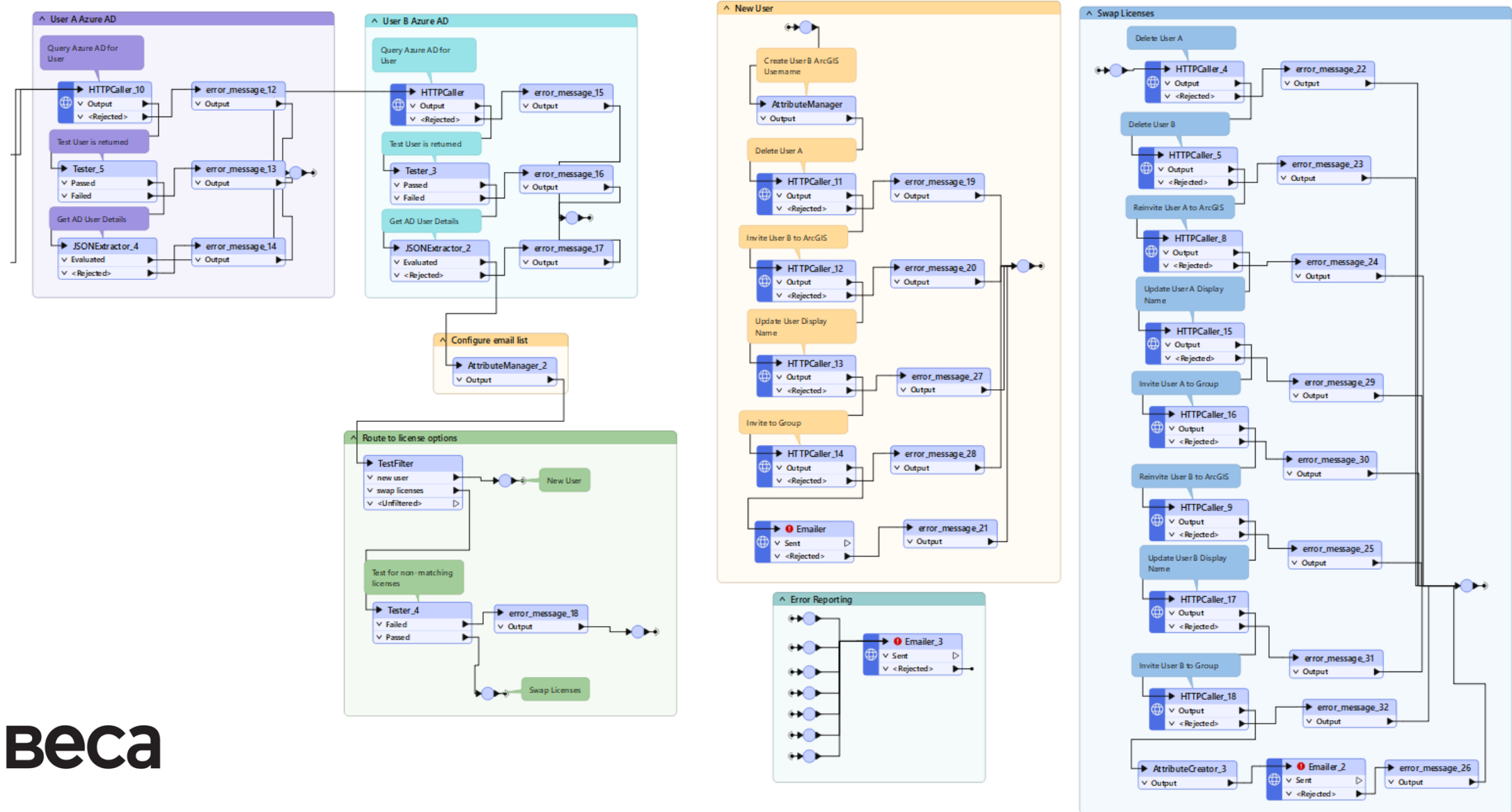
Tool 1: ArcGIS License Transfer

- Behind the scenes – FME Workbench 2



Tool 1: ArcGIS License Transfer

- Behind the scenes – FME Workbench 2



Tool 1: ArcGIS License Transfer

- Benefits

Project Team Autonomy

Inspectors manage their own licensing, avoiding delays waiting for GIS admin availability.

Reduced Admin Time

Since 2023, At least 530 workspace app runs.

15 mins saved per run * 530 =
132.5 admin hours saved.

TOTAL RUNS

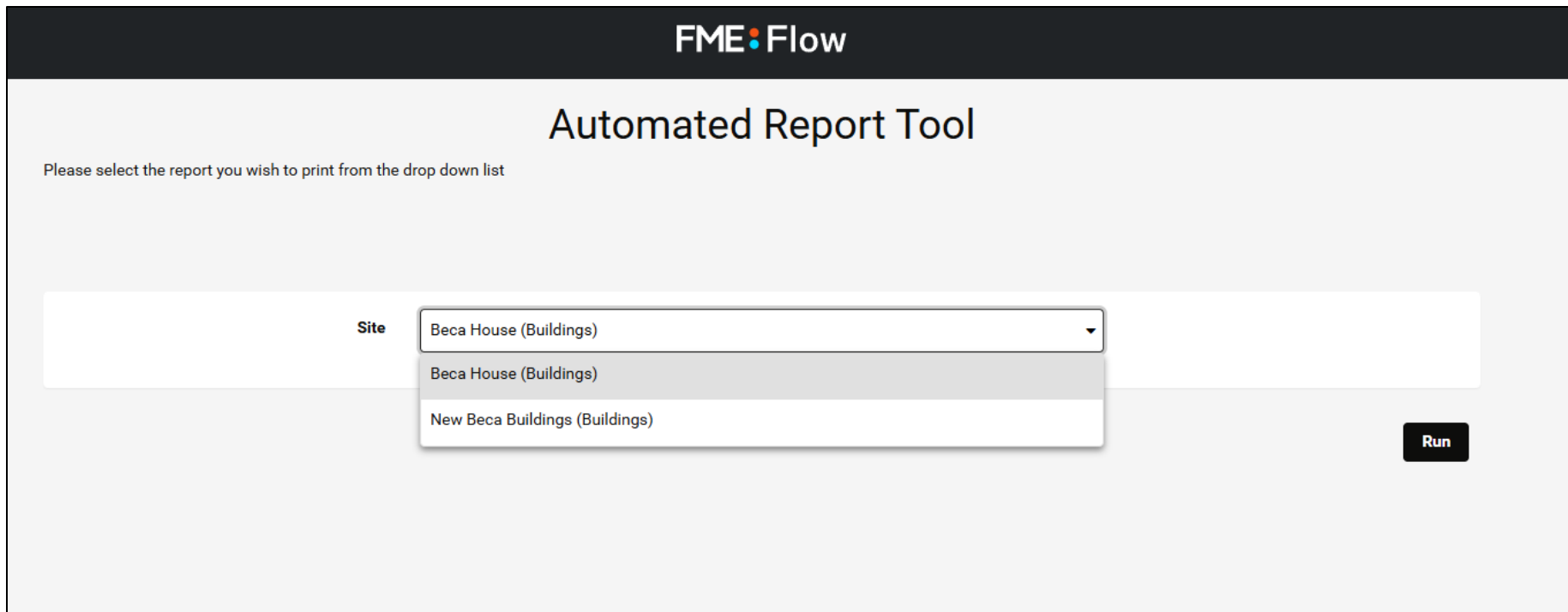
533

Enhanced Transparency

Teams have visibility into license availability and usage, promoting better planning and coordination.

Tool 2: Automated Reporting

- FME Flow workspace app accessed by project team
- Display a list of available reports to print
- Collect user parameter to generate report




The screenshot shows the 'Automated Report Tool' interface within the FME Flow application. At the top, the 'FME Flow' logo is displayed in a dark header. Below the header, the title 'Automated Report Tool' is centered. A instruction text reads: 'Please select the report you wish to print from the drop down list'. The main area contains a form with a label 'Site' next to a dropdown menu. The dropdown menu is open, showing three options: 'Beca House (Buildings)', 'Beca House (Buildings)', and 'New Beca Buildings (Buildings)'. To the right of the dropdown is a large, empty white rectangular box. At the bottom right of the form area is a black button labeled 'Run'.

Tool 2: Automated Reporting

- **Jinja** - open source, powerful and versatile templating engine, used with Python.
- Flexible and customisable.
- Easy to maintain and iterate report template.

Sensitivity: General



Job N°: {{jobcode}}
Page N°: 1
Date: {{datetime}}

Site Visit Report N° {{reportid}}

Project: {{jobcode}}
Principal: {{principal}}
Contractor: {{otherpersonnel}}

Area of site visited:	{{areavisited}}	Purpose of visit:	{{purposeofvisit}}
Date/Time of visit	{{datetime}}	Weather:	{{weather}}
Beca personnel	{{becapersonnel}}	Contractors' representative accompanying Beca personnel:	{{otherpersonnel}}

Health and Safety Observations:

{% if {{healthandsafetytest}}==0 %}

{%tr for r in HealthandSafety %}

{{r.comments}}

{%tr endfor %}

{%tr for r in HealthandSafetyImage %}

{{r.comments}}

Compass reading (*): {{r.compass}}
Photo Direction: {{r.direction}}, {{r.lat}}, {{r.long}}
Time Captured: {{r.time}}
Photo ID: {{r.photoid}}

{{r.imageData|image(height=90)}}

{%tr endfor %}

{% else %}

No health and safety observations.

{% endif %}

General Observations:

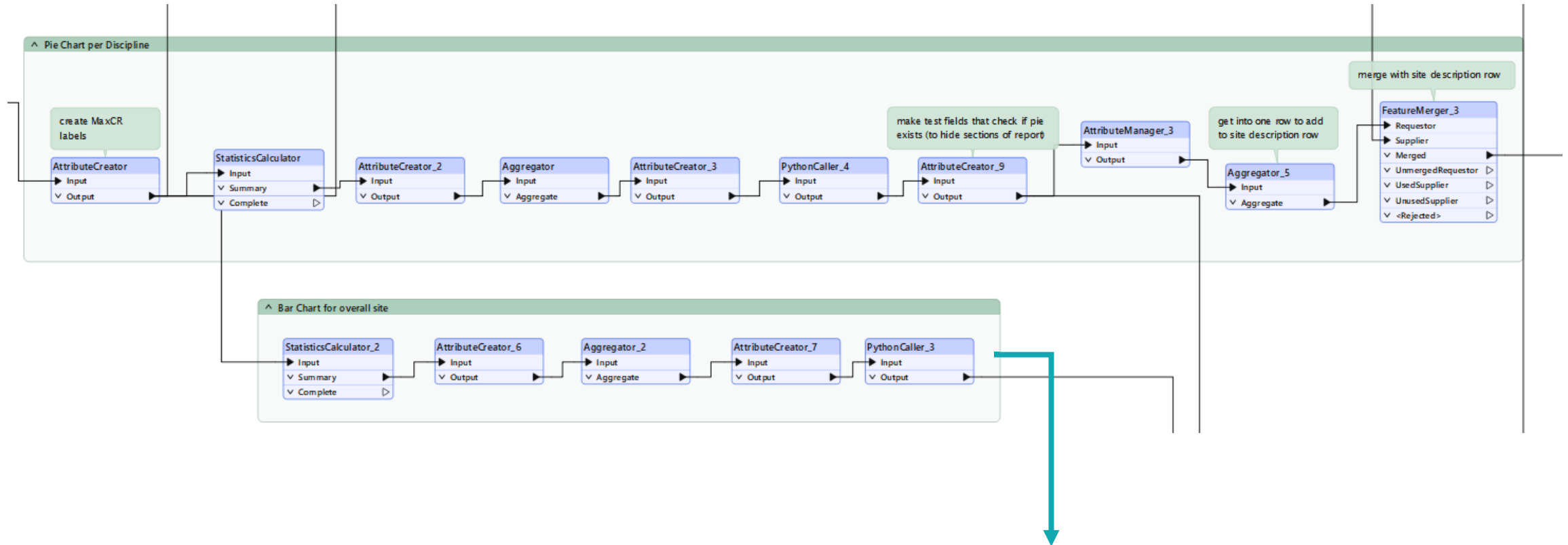
{% if {{generalobservations}}==0 %}

This site visit report is limited to a quality assurance overview of construction. It is also typically limited to sensory examination of what is assessed to be typical elements of the building construction, only where safe access existed at the time. Our inspections do not relieve the Contractor of their responsibility for control of the quality of construction in accordance with the design, drawings and specifications. Where photographs are included or attached, they are for the sole purpose of assisting identification of specific observations listed in this report, and shall not be construed as implied review or acceptance of other Contract Works visible within the photographs.

Observations and comments made do not constitute an instruction to the Contractor to vary or amend the Contract Works. Where required, the issue of a CAN/NI or other formal response in accordance

Tool 2: Automated Reporting

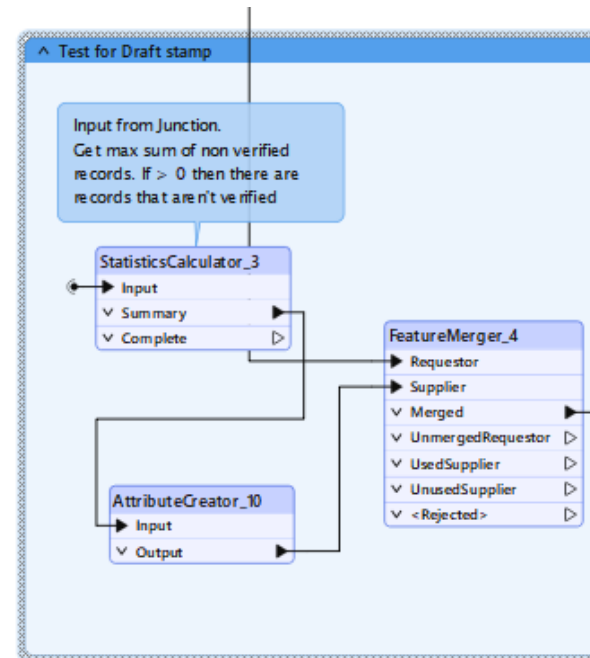
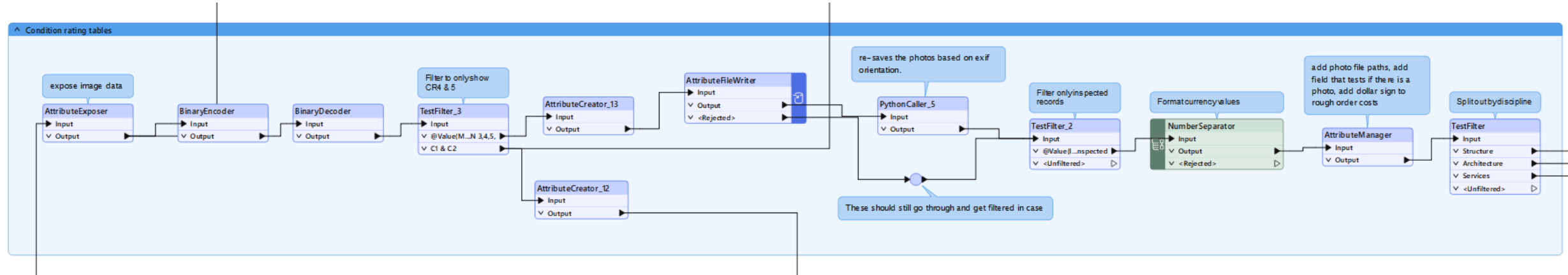
- Behind the scenes – FME Workbench



Create pie charts and bar charts
with matplotlib Python module

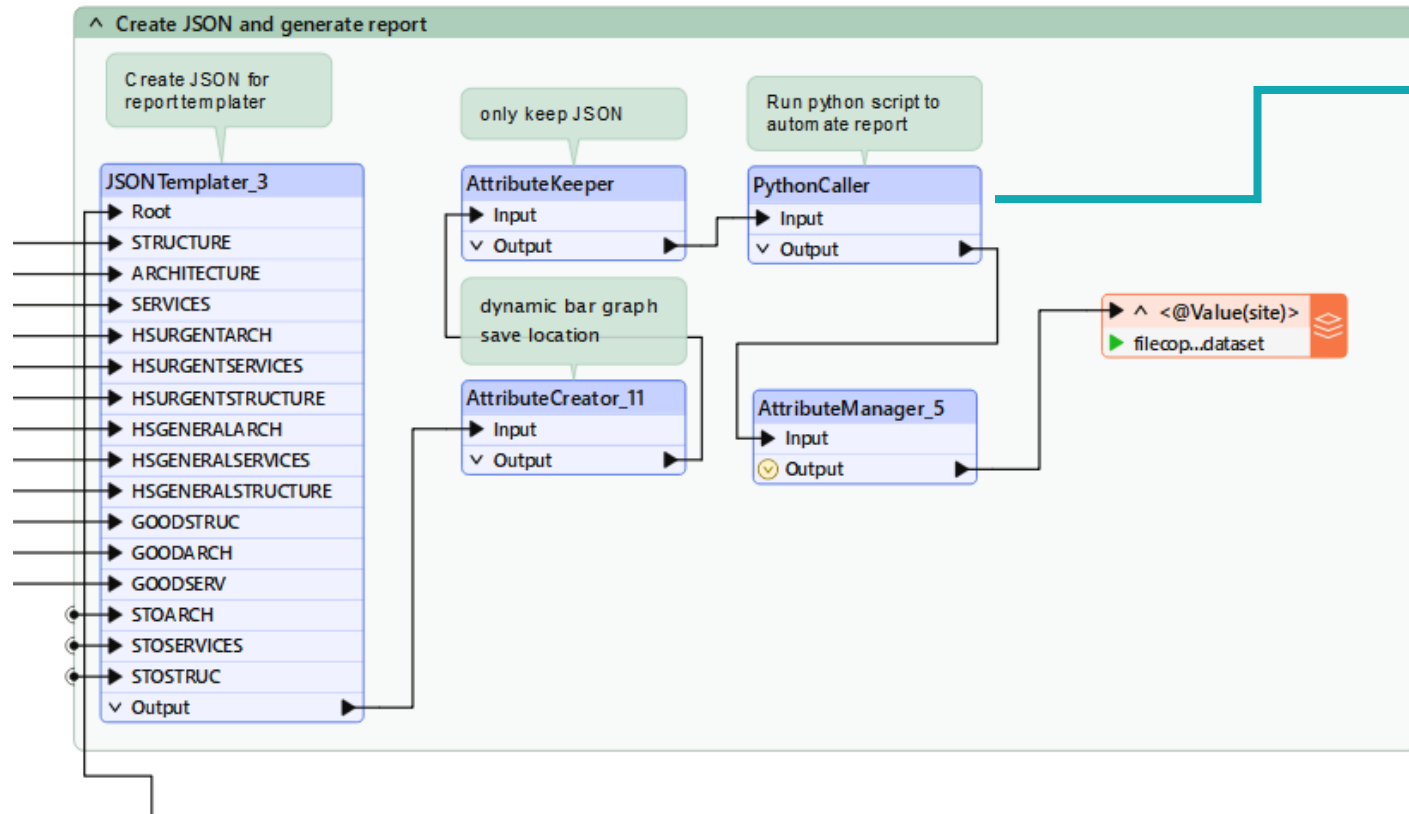
Tool 3: Automated Reporting

- Behind the scenes – FME Workbench



Tool 3: Automated Reporting

- Behind the scenes – FME Workbench



```
1 import fme
2 import fmeobjects
3 import json
4 from io import BytesIO
5 from BecaWordTemplateBuilder import BecaDocxTemplate
6 import docxtpl
7 import os
8
```

```
# read JSON storing report information
data = json.loads(feature.getAttribute('ReportJSON'))

# store report template location
template = BecaDocxTemplate(feature.getAttribute('template'))

# render report
template.render(data)

# save in output location
template.save(feature.getAttribute('OutputFile'))
self.pyoutput(feature)
```

Tool 3: Automated Reporting



DRAFT

Client

Beca House (Buildings) - Facilities and Building Services Condition Assessments

Prepared for Client
Prepared by Beca Limited

Apr 18 2024

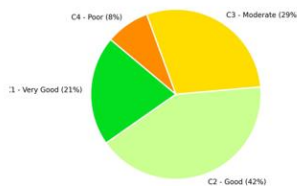


4 Condition

4.1 Condition Summary²

4.1.1 Structure

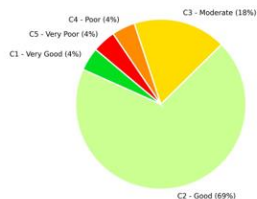
Percentage of assets of each condition rating



The structure is generally in good condition, with few areas of minor corrosion/deterioration observed, major structural concerns on the condition.

4.1.2 Services

Percentage of assets of each condition rating



² Condition summary is based on the maximum condition rating recorded per asset. For example, if an asset is rated 80% condition 2 and 20% condition 5, the maximum condition rating is condition 5.

8403	Column – Column - Steel		Wharf		
Element Condition Rating					Total Component Quantity
Very Good (1)	Good (2)	Moderate (3)	Poor (4)	Very Poor (5)	
50%	30%	20%	0%	0%	6 no
Photo					

Photo



Description: Lamp post are generally in good structural condition, with minor paint peeling noted in some areas. Some corrosion of base plate bolts and corrosion to base plate of lamp post adjacent to canopy. Additionally short threads are noted on this base plate.

Recommendation: No immediate structural recommendations, Component to be reassessed within 12 months.

Asset Work Type	Suggested Timeframe	Rough order costs
Maintenance	FY2025	\$0

+

8470	Balustrade – Handrail - Metal		Wharf		
Element Condition Rating					Total Component Quantity
Very Good (1)	Good (2)	Moderate (3)	Poor (4)	Very Poor (5)	
0%	80%	0%	20%	0%	110 m
Photo					

Photo



C1 and C2 Recommendations

This section lists in table format repair, upgrade and renewal recommendations for systems and components assessed as being in condition C1 - Very Good and C2 - Good and provides an outline scope of works for the short term forward works programme.

Structural Recommendations

Reference ID	Component	Location	Description	Recommendations	Rough Order Costs	Base Life	Asset Works Type	Element Condition Rating
8384	Sun Screen or Awning	Building Exterior - East Side	Repair works are already underway as part of STO-001. Also heavily/moderately corroded connections are to be cleaned or removed and reinstated.	No further recommendations to STO-001. Reinspect canopy as part of standard inspection time frame.	\$0	28	Monitoring	C2 - Good
8395	Steps - Metal	Wharf	Overall, the element appears to be in good structural condition, no structural defects were observed.	No immediate structural recommendations. Component to be reassessed within standard inspection schedule.	\$0	50	Monitoring	C2 - Good
8405	Information Sign	Building Exterior	Overall, the element appears to be in good structural condition, no	No immediate structural recommendations. Component to be reassessed within	\$0	13	Monitoring	C2 - Good



Tool 3: Automated Reporting

- Benefits

Consistent Approach

Standardised and customisable template ensures uniformity across all reports, regardless of who generates them.

Time Savings

Since 2023, At least 600 workspace app runs.

Eliminates manual data compilation and formatting, creating long term cost savings.

Scalability

Allows us to handle larger datasets and more complex reporting requirements with minimal additional effort.

Summary

Streamlined ArcGIS license transfers empowers users and reduces GIS team's admin time.

Automated reporting eliminates manual formatting and creates consistent outputs and long-term cost savings.

Questions?