Case Study Title: Suir Engineering and NTI Ireland Transform Test Pack Workflows Through Automation

Company Overview | SUIR ENGINEERING & NTI IRELAND

Suir Engineering
Established in 1984 and headquartered in Waterford, Suir Engineering is a multi-disciplinary construction consultancy working across several large infrastructure projects. With teams across multiple sites, the company's priorities include workflow standardisation, efficiency, and consistent reporting. Suir Engineering is recognised for its commitment to quality, safety, and continuous improvement. The organisation continues to invest in digital transformation to support workflow standardisation, operational efficiency, and scalable project delivery.

Company website: https://suireng.com/

NTI Ireland
As part of NTI Group, Europe's largest Autodesk Platinum Solutions Provider, NTI Ireland plays a leading role in driving digital transformation across the Architecture, Engineering & Construction (AEC) and Media & Entertainment sectors. The organisation is globally recognised as a trusted technology advisor for AEC, Product Design & Manufacturing (PD&M), and Media & Entertainment industries. NTI Ireland supports clients in achieving operational excellence through future ready digital solutions. Its expert teams collaborate with architects, engineers, designers, and creative professionals to deliver optimised software deployment, strategic and process consultancy, and accredited skills development. The company's focus is on enabling organisations to streamline workflows, enhance productivity, and unlock long term value through digital innovation.

Company website: http://www.nti-group.com/ie

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NTI Ireland

Overview & Background to the Lean Initiative

Test pack generation is the process of preparing structured documentation that specifies how installed building services will be inspected, tested, verified and recorded to demonstrate compliance with project specifications. It has historically been a manual, inconsistent, and labour intensive activity within construction and commissioning workflows. At Suir Engineering, this issue became a critical point of focus as the organisation sought to enhance data quality and streamline project delivery. By early 2025, internal improvement initiatives were underway, yet test pack production continued to represent a significant operational bottleneck. Internal analysis indicated that manual pack assembly accounted for approximately 16% of total commissioning time on large scale projects, highlighting the scale of inefficiency embedded in existing processes.

On peak projects, Suir Engineering was required to generate more than 250 test packs, placing a substantial administrative burden on engineering and commissioning teams. The legacy process demanded an average of 24.25 hours per pack, contributing to delays, inconsistent documentation, and an elevated risk of human error. As one project lead noted, the organisation required a solution that aligned with established workflows rather than imposing a rigid, generic model.

"We wanted automation that actually fits how we work, not a one size fits all approach. A lot of our focus was on improving efficiency, consistency, and quality of information."
— Sean Corcoran, Digital Project Manager, Suir Engineering

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

Suir Engineering had already begun expanding its adoption of Autodesk Construction Cloud; however, achieving meaningful automation and standardisation at scale required specialist support. NTI Ireland partnered with Suir Engineering to design an automated test pack collation workflow capable of reducing manual handling, improving data structure, and ensuring consistent pack generation across diverse project environments.

"Every decision started with understanding Suir Engineering's workflows. Our goal wasn't just to automate but to make the process simpler, cleaner, and scalable across all project sites. We don't hand over a static solution, we build digital workflows that can evolve with a client's business as new disciplines and packs come online." **- David Purdon, Technical Director at NTI Ireland**

With this approach, automation became an enabler of Suir



Figure 1: Suir Engineering team involved in workflow development.

Engineering's digital strategy transforming a major operational challenge into a streamlined, scalable advantage.

"We designed the automation to extend what's possible natively in Autodesk Build, giving the client consistent, fully formatted test packs without the manual effort. We built this side-by-side with their teams, validating each step in real project environments to ensure adoption would be seamless from day one." **- David Purdon, Technical Director at NTI Ireland**

Lean Initiative Improvements & Impact

The implementation of the automated workflow produced significant operational benefits. Multiple disciplines were able to engage more effectively with test packs, and the time required for pack generation was dramatically reduced. Instead of the legacy 24 hour process, automation enabled consistent outputs in under two hours.

"Instead of spending up to 24 hours building test packs manually, teams are now seeing automation deliver a consistent output in under two hours." - Sean Corcoran

from manual duplication were significantly reduced, and teams were able to redirect time toward higher value engineering and coordination activities.

"It saves a lot of duplication and frees our teams to focus on quality and coordination rather than admin tasks." **- Sean Corcoran**

Unexpected benefits have also emerged, including stronger collaboration across teams and the ability to spend more time on meaningful, on-the-ground commissioning work rather than administration. Manual test pack creation required 24.25 hours per pack, and automation reduced this to just 1.48 hours, a 94%

Process Details	Legacy (Hrs/Phase)	Automated (Hrs/Phase)	Saving (Hrs/Phase)
Form Preparation Process	8	0.25	7.75
Pre-Population	2	0.25	1.75
Printing Forms	0	0	0
Review/Approval	4	0.5	3.5
Scanning /Filling Forms	2	0.15	1.85
Compiling & Merging	4	0.13	3.87
Tracking Progress	0.25	0.1	0.15
Bulk Reassign Forms	4	0.1	3.9
Total Time	24.25	1.48	
Time Saving	22.77		

Automated Time Comparison

The standardisation of structured templates and workflows improved documentation accuracy and traceability. Errors arising

reduction in processing time has allowed teams to reallocate time to higher-value engineering activities.

Summary and Lessons Learned

The collaboration between Suir Engineering and NTI Ireland demonstrates how Lean principles, combined with digital automation, can transform a critical operational workflow. By standardising templates, reducing manual handling, and automating pack collation, Suir Engineering achieved significant time savings, improved documentation quality, and enhanced team collaboration.



Figure 2: The Autodesk Construction Cloud platform served as the central data environment for workflow automation.

Key lessons include:

- Standardisation is essential before automation.
- Co creation with end users ensures adoption and practicality.
- Automation frees skilled staff to focus on higher value engineering activities.
- Lean thinking supports long term scalability and continuous improvement.

Suir Engineering now benefits from a streamlined, scalable workflow that supports its broader digital strategy and delivers measurable value across multiple projects.