

DIGITAL CAREERS IN QUANTITY SURVEYING

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DIGITAL CAREERS IN QUANTITY SURVEYING

This guide provides a helpful overview of the digital skills required for a career in quantity surveying. It's intended to help you understand:

- The digital skills you'll need for different types of roles and at different career stages
- How to develop these skills through practical application and training
- How digital capabilities can accelerate your career progression
- Whether digital specialisation may be right for you

This supplementary document should be read alongside the main 'Quantity Surveying Career Stream' guide. Together, these guides offer a picture of how digital capabilities can support those in quantity surveying careers to deliver accurate cost advice, effective commercial management, and better project outcomes.

WHY DIGITAL SKILLS MATTER IN QUANTITY SURVEYING

Quantity surveying is fundamentally a data-driven profession. Measurement, cost estimation, financial reporting, and commercial management all depend on the ability to work accurately with numerical and project information. Digital

tools are already well embedded in quantity surveying practice and standard working tools already include spreadsheets, digital measurement software, and cost databases.

The challenge for quantity surveyors is less about adopting digital tools for the first time and more about extending existing capabilities into model-based measurement, integrated cost platforms, and data analytics. As BIM adoption grows across the design and construction sectors, the shift toward model-based measurement is accelerating, though the pace of change remains uneven.

Every quantity surveying professional now requires digital literacy – from graduate QS professionals learning to use digital measurement tools, to directors using data-rich dashboards for portfolio cost oversight. Specialist digital roles are also emerging, offering new career pathways for those who can combine commercial expertise with advanced technical capabilities.

THE DIGITAL SKILLS LANDSCAPE

Larger consultancies and tier one contractors increasingly use digital measurement platforms, model-based take-off, and cloud-based cost management systems. However, many smaller practices and subcontractor QS teams continue to work primarily with spreadsheet-based systems and PDF measurement, although digital take-off tools are starting to become more widely used.

“To be honest, we don't look for digital skills as a prerequisite for new people coming into the team because everybody's teachable. One of my supervisors had never even turned a computer on until he got into the supervisor role three years ago. But he's an amazing people person, is learning his craft, and learning the trade really well.”

– Janine Branje, General Manager, Hush Interiors

Digital skills required for quantity surveying include:

Foundational technical capabilities – Digital measurement and take-off software (e.g., CostX, Bluebeam), spreadsheet-based and dedicated cost management platforms, cloud-based project management software (e.g., Procore, Aconex), cost databases and benchmarking tools, and basic data literacy for dashboards and reporting.

Commercial documentation and cost management – Digital cost planning and estimating, model-based quantity extraction, variation and payment management through digital platforms, cost tracking and financial reporting, and maintaining auditable commercial records.



Collaboration and communication – Managing commercial information exchange across project participants, coordinating cost management activities with design teams through digital platforms, participating in model-based coordination where relevant to cost management, and communicating cost implications of design decisions.

Strategic commercial competencies – Data-driven commercial decision-making, cost benchmarking and trend analysis, predictive cost modelling, integration of cost data with project performance monitoring systems, and providing advice on digital cost management approaches.

Integration of digital and commercial expertise – Connecting BIM tools with cost planning, using digital platforms to improve estimating accuracy, linking model-based measurement with commercial workflows, coordinating digital cost information with project delivery, and maintaining commercial judgement through digital documentation processes.

INTEGRATING DIGITAL AND TRADITIONAL SKILLS

Digital skills in quantity surveying enhance rather than replace traditional commercial capabilities. Digital tools provide data and information, but commercial expertise determines the advice. Every quantity surveyor benefits from developing digital literacy, regardless of their career stage or specialisation.

What matters is knowing which digital tools to use for specific commercial challenges, how to interpret digital information to inform cost decisions, and how to integrate digital measurement with professional judgement. Quantity surveyors don't need to be software developers; they need to be confident users of digital tools who understand how

to apply them effectively to deliver better commercial outcomes.

Measurement and take-off – Digital measurement software automates quantity take-off from 2D drawings and 3D models. BIM integration allows direct extraction of quantities from coordinated design models. However, the quality of digital measurement still depends on understanding construction methods, measurement conventions, and the completeness of design information.

Cost planning and estimating – Cloud-based cost management platforms enable real-time budget tracking, variation management, and progress claims. Historical cost databases support benchmarking and trend analysis. Effective use requires commercial judgement in applying rates, understanding market conditions, and interpreting data in context.

Contract administration – Digital tools can support expertise in understanding contractual principles and commercial risk by making Digital platforms streamline variation management, payment processing, and contractual correspondence. Project collaboration tools provide structured information exchange between project participants.

Client communication – Data visualisation tools and digital dashboards enable clearer communication of cost information to clients and stakeholders. Effective communication still requires the ability to interpret data, explain commercial implications, and provide sound professional advice.

Financial reporting and analysis – Digital reporting systems integrate cost data with broader project performance monitoring. Analytics tools support benchmarking, trend identification, and evidence-based commercial decision-making. Understanding what the data shows and its limitations remains a core professional skill.

“There’s definitely much more usage in that technology. You only realise how much you use it when there’s a power cut or no Wi-Fi,...In the middle of nowhere, you’d be stuck with no technology and people had to go back to paper-based, and everyone suddenly realised, “Oh man, the technology really helps a lot!”

– Emmolina May, Registered Quantity Surveyor, Lecturer

DIGITAL SPECIALISTS IN QUANTITY SURVEYING

Most quantity surveyors develop digital capabilities as integral parts of their commercial roles rather than specialising purely in digital technologies. The profession continues to emphasise commercial judgement, construction knowledge, and client relationships, with digital tools serving to enhance rather than define professional practice. However, some specialist areas are emerging.

BIM QUANTITY SURVEYOR / 5D BIM COST SPECIALIST

This role combines traditional quantity surveying expertise with Building Information Modelling skills, focusing on extracting cost data directly from models. As BIM adoption grows across New Zealand’s construction sector, QS professionals who can bridge the gap between design models and cost intelligence are increasingly sought after.

Core responsibilities

- **Model-based quantity extraction** – Extracting quantities and generating bills of quantities directly from

BIM models using tools such as CostX, Navisworks, Revit, reducing manual take-off time and measurement error.

- **5D cost modelling** – Developing and maintaining 5D BIM models that link cost data to 3D geometry and project schedules, enabling dynamic cost forecasting as designs evolve.
- **Model quality assurance** – Auditing BIM model quality and Level of Development (LOD) to ensure model elements contain sufficient detail for reliable quantity extraction and cost estimation.
- **BIM execution planning** – Advising project teams on BIM execution plans, information exchange requirements, and classification systems relevant to cost management.

DIGITAL COST DATA ANALYST

This emerging role applies data analytics to construction cost databases, historical project data, and market benchmarking. As New Zealand firms accumulate larger datasets from completed projects, there is growing demand for QS professionals who can interrogate that data to improve estimating accuracy and inform strategic decisions. The role sits at the intersection of quantity surveying domain knowledge and data science capability.

Core responsibilities

- **Cost database management** – Devising, structuring, and maintaining cost databases to ensure historical project data is consistent, searchable, and usable for benchmarking future estimates.
- **Trend analysis and visualisation** – Using statistical analysis and visualisation tools to identify cost trends, outliers, and risk factors across project portfolios.

- **Predictive cost modelling** – Developing predictive cost models that draw on historical data, location indices, and market conditions to support early-stage feasibility and budget-setting.
- **Dashboard reporting** – Producing data-driven reports and dashboards for clients and internal teams, translating complex cost datasets into useable insights.

DIGITAL TWIN COST MANAGER

This role focuses on integrating quantity surveying and cost management functions within digital twin environments. While still emerging in New Zealand, digital twins are gaining traction on major infrastructure and public building projects. A QS professional in this space ensures that the virtual replica of an asset carries accurate, live cost and lifecycle data throughout construction and into operations.

Core responsibilities

- **Real-time cost integration** – Linking cost models and asset data to digital twin platforms so that real-time construction progress is reflected in financial reporting and forecasting.
- **Whole-of-life cost modelling** – Developing whole-of-life cost models within the digital twin framework, supporting clients with operational expenditure planning, maintenance budgeting, and asset renewal forecasting.
- **Cross-discipline data coordination** – Collaborating with IoT specialists, BIM managers, and facilities teams to ensure cost-relevant data flows accurately between sensors, models, and financial systems.
- **Scenario simulation and testing** – Using scenario

simulation within the digital twin to test cost impacts of design changes, procurement strategies, or programme adjustments before commitments are made.

SUSTAINABILITY AND CARBON COST ANALYST

On projects with clients focused on reducing construction emissions and meeting carbon reduction targets, there is growing demand for professionals who can quantify both the financial and environmental cost of design and material choices. This role applies QS cost management skills to embodied carbon measurement, lifecycle assessment, and sustainability reporting. Although it is not purely a digital role, it requires proficiency with the digital tools and databases that are integral to the processes involved.

Core responsibilities

- **Embodied carbon measurement and reporting** – Using carbon calculation tools and product databases to measure and report embodied carbon, integrating carbon data into digital bills of quantities and cost plans using frameworks aligned with New Zealand and international standards.
- **Lifecycle cost-carbon assessment** – Conducting lifecycle cost and carbon assessments using lifecycle analysis (LCA) software and digital cost models to compare material and design options, linking BIM model data with carbon databases to help clients balance capital cost against long-term environmental performance.
- **Green rating scheme support** – Supporting submissions to Green Star or other rating schemes by extracting and structuring the cost and carbon data required for certification, using digital reporting tools to present sustainability metrics clearly to clients and certification bodies.

- **Carbon data management and benchmarking** – Building and maintaining digital databases of carbon coefficients and material environmental data, benchmarking project carbon performance against comparable projects, and developing organisational capability in carbon data collection and analysis to support evidence-based sustainability advice.

AUTOMATED ESTIMATING AND AI COST SPECIALIST

This is a future-facing role driven by the integration of artificial intelligence and machine learning into estimating workflows. In New Zealand, early adoption is occurring among larger consultancies and tier one contractors, but roles in this field tend to sit in more of an information technology role. As AI-powered platforms become more capable of generating preliminary cost estimates from drawings or models, QS professionals are needed who understand both the technology and the commercial judgement required to validate and refine AI outputs.

Core responsibilities

- **AI tool configuration and training** – Configuring, training, and validating AI-powered estimating tools by feeding them quality historical cost data and calibrating outputs against known project benchmarks.
- **Estimate review and validation** – Reviewing and quality-assuring machine-generated estimates, applying professional judgement on items the AI may misinterpret such as site-specific conditions, consenting risks, or market volatility.
- **Technology monitoring and adoption strategy** – Monitoring emerging AI and automation technologies,

assessing their value and applicability, and providing advice on adoption timing and risk.

BUILDING DIGITAL CAPACITY

For quantity surveying professionals, building digital capacity requires curiosity and willingness to learn, practical application and continuous skill development. This includes:

SELF-DIRECTED LEARNING

Most digital learning happens through curiosity or need-driven learning, rather than formal training programmes. If you enjoy exploring tools and solving problems independently, self-directed learning may be the best approach to develop your capabilities more quickly, such as:

- **Online tutorials** – free resources for most architectural software, searchable for specific tasks.
- **Software vendor resources** – most major software providers provide free trials or educational licences, as well as structured learning paths.
- **Industry webinars** – regular sessions from software vendors and industry organisations.

FORMAL EDUCATION AND TRAINING

Tertiary education organisations, including vocational providers, wānanga, and universities increasingly include digital construction skills in their programmes.

Institutions offer courses, diploma and degree options that cover digital documentation, BIM model development, digital project delivery concepts, data management and emerging construction technologies.

PROFESSIONAL DEVELOPMENT

Alongside your own exploration of digital tools and skills, it's important to connect with broader QS and digital construction communities. This not only provides access to a wider range of resources for your self-directed learning, but also offers insights into how these tools are being applied within the industry, and helps develop your network for mentoring or other opportunities.

- **Industry conferences** – Building Institute Aotearoa's DigiComm conference with digital streams, NZIQS events, vendor-run conferences, Australasian and international events.
- **Workshops** – hands-on technical training sessions, software-specific deep-dive courses, and methodology workshops.
- **User groups** – BIMinNZ and other user groups in major centres, software user communities, informal knowledge sharing.
- **Online communities** – LinkedIn groups and software-specific forums where practitioners share knowledge and solve problems together.

GET THE GUIDE

Use the QR code to download the full **Built Environment Digital Career Streams guide** and explore the many **rewarding pathways in the construction sector.**

Or head to the website: **BECareerStreams.nz**

