







## Creating a better future with innovative and sustainable solutions, technology and great people.

BTW Company empowers property owners, communities and project decision makers by providing professional and collaborative consultancy with a commitment to the intelligent application of leading-edge technology that adds value.

With offices in Ngāmotu – New Plymouth, Kirikiriroa – Hamilton, Whāingaroa – Raglan and Taupō, BTW is made up of 90+ professional surveyors, civil and structural engineers, planners, UAV pilots, environmental scientists, 3D scanning specialists, BIM and GIS experts with unparalleled experience on projects throughout Aotearoa – New Zealand and internationally.



Our story and passion for bringing professional services to the regions of Aotearoa - New Zealand begins 50 years ago.

In 1973 business partners and surveyors, Buxton, Tuder and Waugh, began their operations with hydrographic and land surveying services in Australia, and then in New Zealand in 1974. BTW has gone on to be instrumental in the development of significant projects, firstly in the Taranaki region (onshore and offshore) and now further aboard.

This symbol (above) was designed to celebrate 50 years as an Aotearoa - New Zealand owned and operated company. Balancing the past with the future, it represents the many people across BTW's team, consultant and client networks,

and the communities in which we operate, who have all contributed to our continued development, best practice commitment and broad project delivery. It speaks to our optimism, resilience, leadership, collaborative approach, and the next steps we take to creating a better future.

As we move forward embracing change, we are guided by the past and anchored by our shared knowledge and connection to place and people.

*Kia whakatōmuri te haere whakamua.*

*I walk backwards into the future with my eyes fixed on my past.*

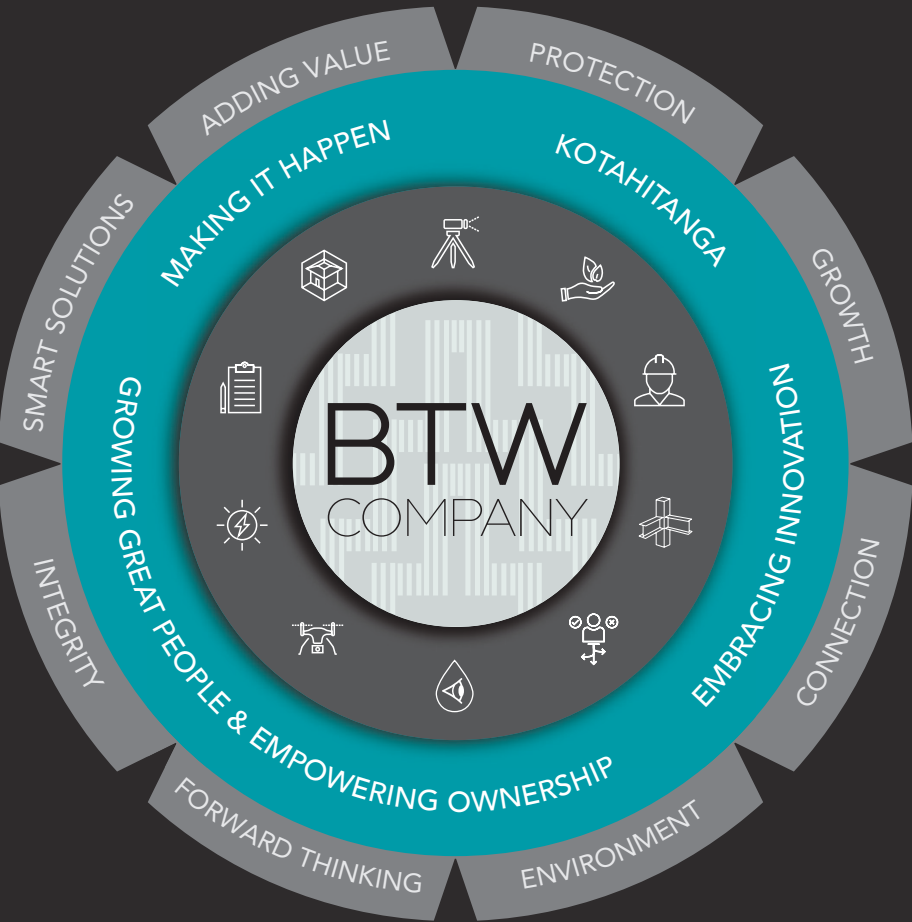
# Knowledge and values are important to our business, guiding the work we do and how we go about it.

Kotahitanga and a culture of collaboration is an ethos that sits at the centre of our operations. BTW is an integrated and collaborative consultancy, working together with collective action, supporting the people and communities we work with.

We leverage the specialist skill and knowledge base across our teams to seamlessly find intelligent solutions to the problems our clients need solved. We save our clients time, money and administrative headaches and build trust between consultant and client teams.

Manaakitanga (respect and generosity, care and reciprocity) together with an understanding of the cultural, social, economic and environmental interests on projects, guides the solutions we provide. An understanding of Tikanga Māori and the 3 principals of Te Tiriti o Waitangi – partnership, participation and protection – lead our approach to project work and inform our business practice.

BTW's core values are centred around client required outcomes, balanced with good professional advice from staff who are empowered and continually developed professionally. To this, we add the latest and best information – whether it be the latest knowledge, process or equipment.



Our culture is guided by five key principles:

## MATAURANGA Knowledge & understanding

An ongoing commitment to learning, continuous improvement, growth and investment in technology.

At BTW, innovation is defined by seeking opportunities and embracing technology in the delivery of smart solutions.

Maintaining our position as a leader in technology driven solutions is a core strength of our business and is achieved through investing in the latest instrumentation, software and hardware, the development of our unique project and land management systems and the continued training of our professionals.

## KAITIAKITANGA Guardianship

Focused on sustainability and an intergenerational approach to protecting what matters.

BTW is proud to have a rich history and strong connection with Taranaki and Waikato communities, and relationships with local iwi at both project and business levels across the motu.

We're passionate about the places we support, the people we work with and the communities that benefit from the services we provide.

BTW are choosing to make positive environmental progress with a goal to obtain Toitū certification and a commitment to continued review and improvements as we take steps forward.

## WHANAUNGATANGA Participation & connection

Relationships with our clients, staff and other stakeholders matter at BTW.

We recognise that a diverse and inclusive work place that fosters creativity, innovation and sharing of knowledge ensures best practice, broad capability and strength in delivery for projects.

Being collaborative within our practice, and wider with consultant groups as required, provides a competitive advantage and a productive team, as well as improved problem solving and decision making for our business and for our clients.

## HAUMARU ME TE MOHIO Smart solutions start with smart systems

Delivering smart solutions is made possible with a commitment to, and continual investment in smart tools and systems.

BTW operates under robust and certified Quality Management and HSE systems and within a culture which recognises these as a core component of our business.

BTW document all engagement records and correspondence to provide transparency. We know that both the process and the outcome matter to our clients.

## ŌHANGATANGA Empowering ownership

BTW recognises that all parties seek to improve their current position when engaging on a project.

True value comes from understanding your starting point before embarking on projects that will cost time and money. We recognise the need for all parties to acknowledge and understand the diverse interests of a project upfront.

We empower owners with comprehensive project insights that inform decision making, protect your asset and investment and provide a clear transition pathway.

With meaningful connection and engagement, great things can happen.



# Leading the way with a smart, innovative and multidisciplinary approach.

BTW ‘makes it happen’ for our clients and consultant groups providing clarity and confidence with expert advice, project management and delivery. Our continued investment in innovation and technology enables us to seamlessly deliver best-fit outcomes and cost efficiency.

Regardless of the nature or scale of a project, experience tells us that the right outcome starts with engaging the right people at the right time. Being an integrated multidisciplinary consultancy means cross discipline collaboration and support from end to end.

BTW consults with local Iwi, Hapū and Whānau and work closely with landowners, developers, councils, and the wider community to ensure future-focused, smart solutions are achieved.

SURVEYING	3D LASER SCANNING	BIM AND MIXED REALITY
ENVIRONMENT	PLANNING	UAV SERVICES
STRUCTURAL ENGINEERING	CIVIL ENGINEERING	GEOTECHNICAL SERVICES
DATA AND DOCUMENT MANAGEMENT	ENERGY	THREE WATERS INFRASTRUCTURE





## KAITOHU WHENUA

### SURVEYING



Providing clarity and confidence so you can maximise value and yields.

BTW provides end-to-end services including subdivision and land development, mapping, UAV (unmanned aerial vehicles), engineering surveying, 3D laser scanning and BIM (Building Information Modelling).

#### APPLICATION/SERVICES INCLUDE:

- Property boundary surveys
- Small and large-scale subdivisions, both urban and rural
- Project management and construction supervision for land development projects
- Topographic surveys for architectural design
- As built surveys
- Paddock areas and analysis work
- Aerial imagery and the location of existing services such as three waters and gas lines.
- Monitoring and deformation surveys, both on and offshore
- Geodetic / Control surveys
- Construction set-out and machine guidance
- Cross-lease and Unit Title surveys
- Easement surveys
- Maori land plans
- Reserve and waterway protection, land access maps, and land management
- Landslip and flood damage mapping.
- Earthworks monitoring to keep projects on track

## 3D LASER

### SCANNING



Saving time, money and materials is made possible.

A streamlined process with improved outcomes is made possible with 3D laser scanning – a new and innovative technology which is revolutionising survey data capture techniques and is challenging traditional thinking.

Having accurate and up-to-date as-built information can reduce construction costs, shorten design and construction timelines and result in little or no Requests for Information.

3D data capture and the use of cloud point data rather than gathering single point data, enables BTW to provide clients with an unprecedented amount of accurate, high quality data in an efficient and user friendly manner and ensures that every detail is recorded.

After using 3D laser scanning instrumentation at your site, precise scan data is used to create 2D and 3D views and models in AutoCAD and Revit. These models are used for design, consenting and compliance purposes and by owners, stakeholders and consultant teams to inform their work, and better understand and manage asset lifecycles.

#### APPLICATION/SERVICES INCLUDE:

- Accurate as-built documentation of a facility for redesign and refurbishment projects, or for updating existing plant documentation in 3D
- As-is Condition surveys for structures such as roads, railways, bridges, tunnels and buildings which require accurate and detailed datasets
- As-built and As-is conditions for Mechanical/Electrical/Plumbing services and structures (BIM)
- Heritage buildings or historic site preservation and 3D visualisation
- Determination of plumbness of structural elements such as beams, columns, walls or floors
- Monitoring of structures, coastal erosion or deformation
- Production of high resolution topographical maps which generate 2D and 3D CAD views enabling measurement of distances, areas, and volumes
- Production of 3D modelled objects from as-built point cloud data

## UAV SERVICES



Informing decisions in real time with accuracy, safety and efficiency.

UAV technology allows us to complete small and large-scale mapping work in a cost-effective, accurate and safe manner. Using our quadcopter UAVs, we can fly, process, and deliver usable, "to scale" (orthorectified) imagery to clients on the same day. BTW's Civil Aviation Authority certified UAV pilots have experience and embrace safe operating procedures to allow us to fly within a safe distance of any structure and to close the gap with our high-resolution camera and thermal sensor.

These innovative solutions are utilised for inspections on flare stacks, tanks, and roofs, as well as water leak detections, site investigations, contaminated land and much more.

### OUR PREDOMINANT UAV USE CASES ARE:

- Construction; compliance and progress monitoring
- Quarries and mining; compliance and volume comparisons
- Monitoring; structures and coastal erosion
- LiDAR - offers higher accuracy, better penetration through vegetation, improved data density, higher vertical resolution, and improved efficiency
- Multispectral - to detect subtle variations in plant health before visible symptoms appear
- Thermal - rapid and reliable aerial thermal imaging to capture infrared radiation to detect surface temperature differences
- Archaeology mapping
- Forestry and farm mapping
- High-resolution mapping (15mm p/pixel) for a georeferenced image and surfaces
- Building inspections - Inspection Camera (30x optical zoom and 6x digital zoom) to inspect any point of interest from a safe flying distance whilst gathering great levels of detail.

## BUILDING

## INFORMATION

## MODELLING



Smart technology that improves the process and the outcome.

BTW maps the environment for clients, by pairing intelligence with innovation. Leveraging multiple information sources, BTW uses Building Information Modelling (BIM) to create intelligent, all-encompassing 3D models that accurately present the geospatial and functional characteristics of our projects.

Throughout a project's entire duration BIM, Virtual and Mixed Reality technology allows for streamlined collaboration and the sharing of complex information across the different design services and construction teams. BIM models also allow clients to visualise a building, space or infrastructure asset before work commences, leading to improved decision making and, in many instances, reduced costs.

### APPLICATION/SERVICES INCLUDE:

- Planning
- Surveying
- Subdivision and land developments
- An ideal resource for all multi-phase construction projects



TAIAO

ENVIRONMENT



## Helping property owners gain consents and meet regulations & corporate responsibilities.

Our Environment team apply specialist knowledge and environmental testing tools with integrity, gaining trust and respect from clients of various backgrounds including Iwi/Hapu, private landowners, decision-makers and industry stakeholders.

BTW's highly specialised environmental services provide landowners with required environmental compliance and management plans, environmental monitoring and reporting, Health, Safety and Environmental auditing, ecological assessments and reporting, and asbestos surveys and management plans.

---

### APPLICATION/SERVICES INCLUDE:

- Environmental management and compliance plans.
  - Groundwater investigation and reporting services.
  - Pre-purchase due diligence assessments
  - HAIL assessment (Hazardous Activities and Industries List)
  - Preliminary Site Investigation (PSI)
  - Detailed Site Investigation (DSI)
  - Remedial Action Plans (RAP)
  - Site Validation Reporting (SVR)
  - Site Management Plans (SMP)
  - Health, Safety and Environment audit and gap analysis reporting
  - Ecological assessments and reporting
  - Asbestos survey and management plans
  - Continuous monitoring solutions
- 

WHAKAMĀHERE

PLANNING



## Guiding you to a successful consenting outcome.

BTW's Planning specialists provide clients with comprehensive project insights that not only inform decision making and provide a clear pathway through the resource consent application process, they also help to reduce financial risk and maximise a project's potential and value.

---

### APPLICATION/SERVICES INCLUDE:

- Feasibility studies
  - Resource consent applications
  - Environmental impact assessment
  - Community consultation
  - Archaeological authorities
  - Policy planning
  - Project management
-

KAIPŪKAHANGA  
HANGANGA

STRUCTURAL  
ENGINEERING



Creativity and precision to shape your build.

Any landowner or commercial tenant looking to make better use of their site can leverage our skillset to successfully implement new structures or improve existing ones.

BTW Engineers are dynamic professionals, drawing on an extensive, collective expertise and knowledge base to provide innovative solutions for safe structures that maintain good longevity.

We are objective and think laterally to overcome challenges that site and project requirements may serve up.

For a new build, an alteration, extension or strengthening — BTW’s integrated design services team can make it happen safely with smart solutions that are fit for purpose and to code standards.

APPLICATION/SERVICES INCLUDE:

- Structural Strengthening – Design and Documentation to ensure your project meets New Zealand building code standards.
- Seismic assessments
- Retaining wall design services to stabilise slopes and improve land usability.
- Project management and site supervision
- Soil tests and foundational design

KAIPŪKAHANGA  
METARAHI

CIVIL  
ENGINEERING



Providing cost-effective solutions with intelligent  
civil engineering.

Delivering successful outcomes for our clients means meeting code requirements and using intelligent design to produce fit for purpose and fit for budget designs.

At BTW, our Engineering Team is led by Chartered Professional Engineers who are able to give our clients the confidence of certified engineering solutions for General Civil, Three Waters, Environmental, Traffic, and Transportation Engineering projects that require a single component or all required Civil Engineering Services.

APPLICATION/SERVICES INCLUDE:

- Soil tests and foundational design
- Civil design
- Three Waters Design
- Traffic and transportation design
- Bridge design
- Environmental Stormwater Design, including pond/wetland - stormwater attenuation, nutrients, suspended solids, river re-alignments, gully fills, farm dams, stormwater discharges.



## GEOTECHNICAL SERVICES



### Knowing where you stand.

Having a good understanding of the ground beneath your feet with soil and rock mechanics is a vital starting point for any civil, infrastructure or building project.

BTW's civil engineering team have specialist geotechnical professionals and intelligent investigative technology to allow us to investigate subsurface geologic conditions and provide clients with intelligent solutions.

---

#### APPLICATION/SERVICES INCLUDE:

- Geotechnical site walkover, investigation, and characterisation
  - Geotechnical Assessment Reporting
  - Pre-purchase geotechnical desktop studies, suitability, and feasibility studies
  - Foundation design recommendations
  - Slope stability assessment, risk analysis and stabilisation
  - Geological and engineering geological mapping
  - Geotechnical construction monitoring and certification
  - Slope instrumentation and monitoring
  - Settlement instrumentation and monitoring
  - Settlement and liquefaction analysis
  - Ground water monitoring
- 

## CENTRALISED DOCUMENT MANAGEMENT PLATFORM



### BTW's Centralised Document Management Platform is a cloud based system and a central source of truth to store all project information.

This cloud base document management improves accuracy by reducing errors and rework, streamlines review and approval workflows, aligns team members, and makes project scheduling easier.

This system provides the asset owner a common data environment, and management and control of the entire project team. Having the ability to organise and share files confidently and securely to stakeholders allows project teams to stay ahead of changing conditions and issues.

---

#### APPLICATION/SERVICES INCLUDE:

- Owners
  - Project Managers
  - All members of a project team looking to track the project lifecycle
  - Architects
  - Designers
  - Engineers
  - Contractors
  - Drafters, Detailers, BIM and VDC managers
  - Fabricators
-



PŪNGAO

ENERGY



## Understanding the need for accuracy and delivering with certainty.

BTW's Energy Team have the specialist skills, knowledge and experience to support renewable energy and downstream projects, as well as project management for all aspects of seismic surveys and wellsite developments.

Providing professional services to the Energy Sector is what our company was founded on, and today our ability to manage stakeholder engagement and delivery services and solutions across the complexities and various stages of Energy projects remains a key focus for our operations.

From community engagement, advising on cultural and environmental aspects, planning and consent requirements through to project management – being a multidisciplinary service provider with strong relationships, BTW's on the ground team are well placed guiding clients, both with existing sites, and newly developed solar, wind, geothermal projects alongside hydrogen, petroleum and natural gas infrastructure.

### APPLICATION/SERVICES INCLUDE:

- Site mapping, Iwi/Community/Landowner consultation and liaison, Preparation of Assessment of Environmental Effects, Traffic Engineering, Resource Consenting, Environmental and consent compliance monitoring, Survey control and survey set out during construction, Civil Engineering Design, Deformation Monitoring, Project Management
- Land Access and Project Permitting
- Production Facility Services, including; Feasibility studies for site selection, Geotechnical Investigations
- Seismic Survey Services
- Wellsite Development
- Wellsite Maintenance
- Pipelines



THREE WATERS

INFRASTRUCTURE



## Keeping watch on water

BTW have a team of multidisciplinary specialists focused on solving water issues. WAI EYE, Kanohi Hōmiromiro (an eye for detail), is a BTW programme and innovative approach to infrastructure assessment using environmental engineers and scientists, skilled surveyors and UAV pilots, and leading remote sensing and IoT technology.

The innovative approaches developed by BTW's WAI EYE team have been pioneered in Aotearoa by BTW in collaboration with Council's and Water Suppliers, and align with the vision statement of Te Mana o Te Wai.

### WATER SUPPLY – LEAK DETECTION

BTW surveys pipelines, canals, and reservoirs to locate water leakage effectively and efficiently. This is achieved using UAV-mounted thermal, multi-spectral, and imagery sensors in combination with water pressure, flow, and physio-chemical analysis. This data is then packaged up into a simple online dashboard for asset managers to simply view and interact with. This modern delivery platform is a significant improvement from traditionally lengthy reports collecting dust and hiding data.

### WASTEWATER – INFILTRATION AND INFLOW ASSESSMENT

Unnecessary water infiltration and inflow (I&I) into wastewater networks presents economic and environmental impacts. To identify and isolate I&I, BTW uses a portable array of level, flow, and rainfall sensors, combined with IoT telemetry to monitor data. Statistical algorithms are then used to prioritise problematic pipelines so that asset managers can make informed decisions for repairs and renewals.

### STORMWATER – NETWORK SURVEY AND CALIBRATION

BTW complete targeted stormwater asset survey and monitoring, including the following items:

- Asset survey; such as culverts, stormwater basins, gullies, and pipe/manhole surveys
- LiDAR survey of large stormwater catchments
- Installation and monitoring of stormwater basin level sensors for model calibration and early warning alert systems
- Stormwater model verification surveys – including building floor level capture
- UAV Thermal Survey / Imaging

### WETLANDS – IDENTIFICATION AND DELINEATION

Often referred to as the kidneys of the earth, wetlands play a critical role in water quality, provide habitat for native and endangered fauna and flora, maintenance of water flows and supply, and reduce flood and storm surge risk. BTW uses a multi-faceted approach combining remote sensing (multi-spectral, LiDAR, and high-resolution aerial imagery) and 'boots on the ground' environmental assessments to identify, delineate, and monitor wetlands to ensure that these valuable ecosystems are protected and restoration is facilitated.





Good business is really about good relationships.

BTW knows this is true both internally and externally and continually cultivates relationships at every level – between our own teams, our clients, local iwi and our consultant network. By creating an ecosystem that focuses on everything through the lens of our core values, we’ve built a strong culture, established strategy-level relationships with partners, and work together more efficiently to achieve smart solutions. The BTW team brings a wealth of experience and qualifications to the projects they work on, embracing innovation and taking ownership to make it happen.

For 50 years, our focus on meeting (and often exceeding) our client’s expectations and providing innovative, cost-effective services and solutions has been a success. Passion for our professions and a strong focus on harnessing leading edge technologies builds strength in our client services.



Grant Aitken  
KAIWHAKAHAERE MATUA  
MANAGING DIRECTOR



Graeme Johnston  
DIRECTOR, SURVEYING &  
ENERGY



Cam Twigley  
POU TAIAO | DIRECTOR,  
PRINCIPAL PLANNER



Ian Steele  
DIRECTOR/ PRINCIPAL  
CIVIL ENGINEER



Mathew Dickey  
KAITOHU MATAARO METARAH  
DIRECTOR, PRINCIPAL CIVIL /  
THREE WATERS ENGINEER



Keith Preston  
DIRECTOR, GEOSPATIAL  
AND ENERGY



Kathryn Barrett  
CADASTRAL SURVEY TEAM  
LEADER, ASSOCIATE



Trevor Masters  
INFORMATION SYSTEMS  
MANAGER, ASSOCIATE



Taryn Martin  
LAND DEVELOPMENT  
SURVEY TEAM LEADER,  
ASSOCIATE



Sean Husband  
KAIPŪKAHANGA METARAH  
CIVIL TEAM LEADER,  
ASSOCIATE



Dave Bolger  
ENVIRONMENT MANAGER,  
ASSOCIATE



Wasi Shirwali  
WAIKATO ENGINEERING  
TEAM LEADER, HAMILTON,  
ASSOCIATE



Aaron Edwards  
POU WHAKAMĀHERE  
TAIAO MATUA  
PLANNING MANAGER



Nichola Cavaye  
QUALITY, SAFETY AND  
CULTURE MANAGER



Remalia Wallis  
ENVIRONMENT TEAM  
LEADER, HAMILTON



Greg Larkin  
ECOLOGY TEAM LEADER



Trudy Brewer  
ADMINISTRATION MANAGER



Roy Weaver  
CHAIR, INDEPENDANT  
DIRECTOR





### Ensuring our work is of the highest quality

We follow a considered quality management policy to consistently achieve high-quality results.

At BTW Quality Management Systems are certified to the AS/NZS ISO 9001:2015 and provide a framework and controls to help us deliver high quality, fit for purpose products and services.

Checks, balances and peer reviews are employed before any work leaves the building to go to our clients.

### Safety by design

The BTW team operates under a robust HSE system and within a culture which recognises HSE as a core component of our business, led by BTW Directors and a dedicated Quality and HSE Manager.

Our HSE system falls under our AS/NZS ISO 9001 Quality Management System. BTW is also certified to AS/NZS ISO 45001, the global occupational health and safety management system standard.

At BTW Company our Quality Management System provides the framework and controls to help us deliver quality, fit for purpose products and services, whilst continually analysing and improving.

### Community

We actively support a number of programmes and causes through grant making, sponsorship and by contributing volunteer work hours. Full details of our community support programme are available at [btw.nz/about/community](http://btw.nz/about/community)

Our role as kaitiaki for our whenua and culture sees time, expertise and funding invested into our communities and iconic conservation projects across Aotearoa. One project that we're proud to support is Taranaki Mounga. Kaitiakitanga and a commitment to environmental best practice and efficiency are at the core of our sustainable business. As a Taranaki Regional Council Environmental Award category winner for 2020, BTW is recognised as a leader in ecological restoration – showing outstanding leadership within the business community towards pest control efforts and innovation on Taranaki Maunga. Through our longstanding partnership with Taranaki Mounga and ongoing contribution of volunteer hours, we demonstrate how innovation and a team approach is rewarded by staff wellbeing and environmental conservation.

### Membership

BTW Company maintains various memberships with reputable industry and business organisations and associations throughout New Zealand. These active memberships demonstrate our commitment, participation and contribution to the business communities we operate within. A list of memberships is available at [btw.nz/about/memberships](http://btw.nz/about/memberships)



A photograph of a modern, white, single-story building with large windows. A seagull is captured in mid-flight, its wings spread wide, positioned above the building's roofline. The sky is a pale, overcast blue.

# BTW COMPANY

## Get in touch

0800 289 787

[info@btw.nz](mailto:info@btw.nz)

[www.btw.nz](http://www.btw.nz)

### New Plymouth – Ngāmotu

179-181 Courtenay Street  
New Plymouth 4340

### Hamilton – Kirikiriroa

517 Anglesea Street  
Hamilton 3240

### Raglan – Whāingaroa

1 Wainui Road  
Raglan 3225

### Taupō

12 Ashwood Ave  
Taupō 3330

**SURVEYING | ENGINEERING | PLANNING | ENVIRONMENT**