

# Got It!

Drones that see almost everything,

**We can “get it” too!!**

... to see and understand

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# THIS PRESENTATION

- ▶ To tell our story:
  - ▶ We want to show you pictures, 3D images and video
  - ▶ We have some technical specs we can share
  - ▶ We want you to interrupt and ask questions!
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# TECH SPECS

**DJI Zenmuse XT Camera 30Hz 336x256**

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**DJI Phantom 4 Pro with 1 Extra Battery & Hardshell Backpack**

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**DJI Inspire**

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**DJI Matrice 210**

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**DJI Zenmuse X4S**

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**DJI Zenmuse Z30**

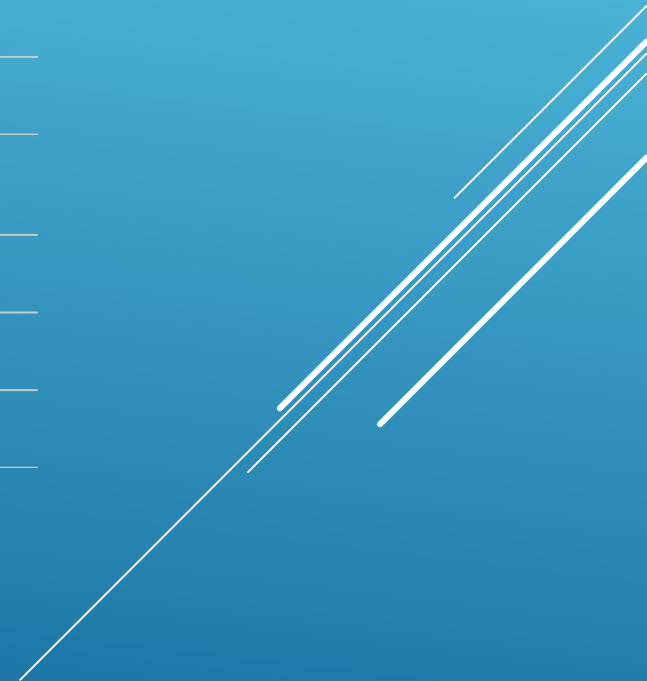
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**TB55 Intelligent Flight Battery**

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**MATRICE 200-PART08- Zenmuse XT Gimbal Adapter**

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# THIS STORY

- ▶ This is a case study covering areas that we think that you might benefit from using drones and team
  - ▶ We have some awesome footage and we want to share!
    - ▶ Cost saving is in only needing a few people to take the footage for a short period of time
    - ▶ But you can explain things to your stakeholders
    - ▶ You can market yourselves
    - ▶ You can see the scale and extent of problems
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# WHO BENEFITS AND WHY?

- ▶ The Public
  - ▶ Great Communications
    - ▶ Timely
    - ▶ Scale and locational information
    - ▶ Pictures are still trusted and too difficult to fake
    - ▶ Manages social media just fine
    - ▶ Can reference consideration of options




# WHO BENEFITS AND WHY?


- ▶ Governance

- ▶ Have a better sense of what their decisions will impact
    - ▶ Scale, risk and timing issues
  - ▶ No site visit required
    - ▶ No opportunity anyway
    - ▶ Often expensive and limited access
  - ▶ They love the footage – it will become BAU for them in future
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# WHO BENEFITS AND WHY?

- ▶ Management
    - ▶ Footage used for scaling resources and priorities
    - ▶ Can be used to plan health and safety at a high level
    - ▶ Can use to communicate with external parties & governance team
    - ▶ Helps to explain matters to staff, including front line customer services
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# WHO BENEFITS AND WHY?

- ▶ Staff and Contractors
    - ▶ One truth of situation
    - ▶ Health and safety planning
    - ▶ Technical calculations
    - ▶ Resource planning and procurement
    - ▶ Organisational awareness of site and issues
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# CASE STUDIES

- ▶ Bridges
  - ▶ Washouts & mass earth movements
  - ▶ Coastal Erosion & Climate Change–Akitio
  - ▶ Water supply developments
  - ▶ Waste water wetland options
  - ▶ Cemeteries
  - ▶ Building
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# BRIDGES

- ▶ Reduces need to close public roads
  - ▶ Improves access over difficult terrain
  - ▶ Reduces costs for aerial imagery and flight operations
  - ▶ Overcomes resource constraints
  - ▶ Removes or minimises risk to our inspectors
- ▶ Results
  - ▶ Too many rain events – three in one year
  - ▶ Slips have been the focus, but
  - ▶ We have found a busted bridge
    - ▶ We can now work out how to manage the situation and plan for its repair

# WASHOUTS & EARTH MOVEMENTS

## 3D Imaging

- ▶ High aerial view to seek design and external advice/permissions
  - ▶ Medium detail view for Governance, Management planning and approval
  - ▶ Detail view for access, design and materials for build/repair
  - ▶ Traffic management planning
  - ▶ Records the repair – before and after
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# CLIMATE CHANGE

## Records Coastal Condition

- ▶ High aerial view to seek external advice
  - ▶ Alternate road route options
  - ▶ Identify farm road routes and suitability
  - ▶ Very long term planning now
  - ▶ Starts the conversation for managed retreat
  - ▶ Initiates planning for design and cost of options
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- ▶ Yep, we have a plan!




# IMPOUNDED WATER SUPPLIES

- ▶ Woodville Development of New Reservoir
    - ▶ Scope of terrain and issues
    - ▶ Result: Great progress updates for build
  
  - ▶ Dannevirke
    - ▶ Technical inspection challenging and costly
    - ▶ Result – solved a problem – there was no dead animal on the pond, just under the water,
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# CEMETERIES

- ▶ Another way to show people where they are
  - ▶ Shows the scale of the cemetery
  - ▶ Gives the terrain and set out
  - ▶ Encourage people to visit
  - ▶ Results
    - ▶ World first : Cemeteries never done before in a Sketch-fab 3D rendering
    - ▶ Simple and transferrable format for web-site consumption
    - ▶ Zoom in and out in 3D

# PAHIATUA TOWN CENTRE UPGRADE


- ▶ Pre-planning
  - ▶ Scale of area and works
  - ▶ Objects of interest – not just from memory
  - ▶ Captures the moment in time – before adventures are undertaken for the upgrade!
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# TDC FORESTS

- ▶ imaging of council owned forestry assets
  - ▶ Extent of harvest and replant
  - ▶ State of Roads
  - ▶ Saved a trip for council and staff
  - ▶ Gets across rough terrain
  - ▶ Another “snap shot in time”
  - ▶ Thermal infrared camera handy for deer hunting!
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# BUILDING

- ▶ MBIE Online Consenting System Strategy in 2014 wanted 3D internal structures
  - ▶ Security of images
  - ▶ Only for new structures?
  - ▶ Allows roof inspections
  - ▶ We are ready to commence, but its in the cloud and,
    - ▶ We need a library for 3D imagery
    - ▶ We need to make it part of the LIM
  - ▶ You don't always need a drone!
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# CONCLUSION

- ▶ Drones are now essential for local government
  - ▶ It is time to get going and make this happen at your Council!
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