

Constructive engagement

The GeoBuild interoperability standards will enable quick and easy access to various information sources within the built environment.

THE MINISTRY of Business, Innovation & Employment (MBIE) is collaborating with Land Information New Zealand (LINZ) and the private sector to develop GeoBuild, a set of standards for consumers, the construction sector and government that links all aspects of the construction process from design through to procurement, construction and maintenance.

GeoBuild will set minimum national standards and software protocols to allow information sharing between the private and public sectors. When interoperable, the three initial technology applications adopting the GeoBuild standard are expected to improve productivity, building quality and safety and lower building costs.

Making information accessible

Information about a particular piece of land or building is currently held in different places, such as private businesses, central and local government agencies, different locations and many different formats. The information is in silos, and the lack of common standards and formats limits access and use of the information.

With GeoBuild, land and building owners, developers, architects and designers, building

and construction companies and central and local government agencies will be able to locate quickly all available information.

They will be able to see everything above and below the ground and, if the building was designed using building information modelling (BIM) software, a 3D view of the building and its structural components. This information will inform better decision making and save time and money for new developments or building work.

Another benefit will be the ability to collect data on buildings as they are planned, consented and built and monitor their performance over the lifetime of the building.

Analysis of this multi-level built environment information will enable identification of building designs and systems or particular products found to have faults many years after they were installed.

Introducing the interoperability standards

The GeoBuild interoperability standards will be applied initially to a national online consent system, BIM and location-based information.

National online consent system

The online consent system is critical to GeoBuild and will accept digital applications

for building consents. Any information submitted as part of the consent application will have to comply with the GeoBuild interoperability standards.

Electronic applications will be easier and cost less than paper applications, and the lodgement forms and process will be the same for all building consent authorities (BCAs).

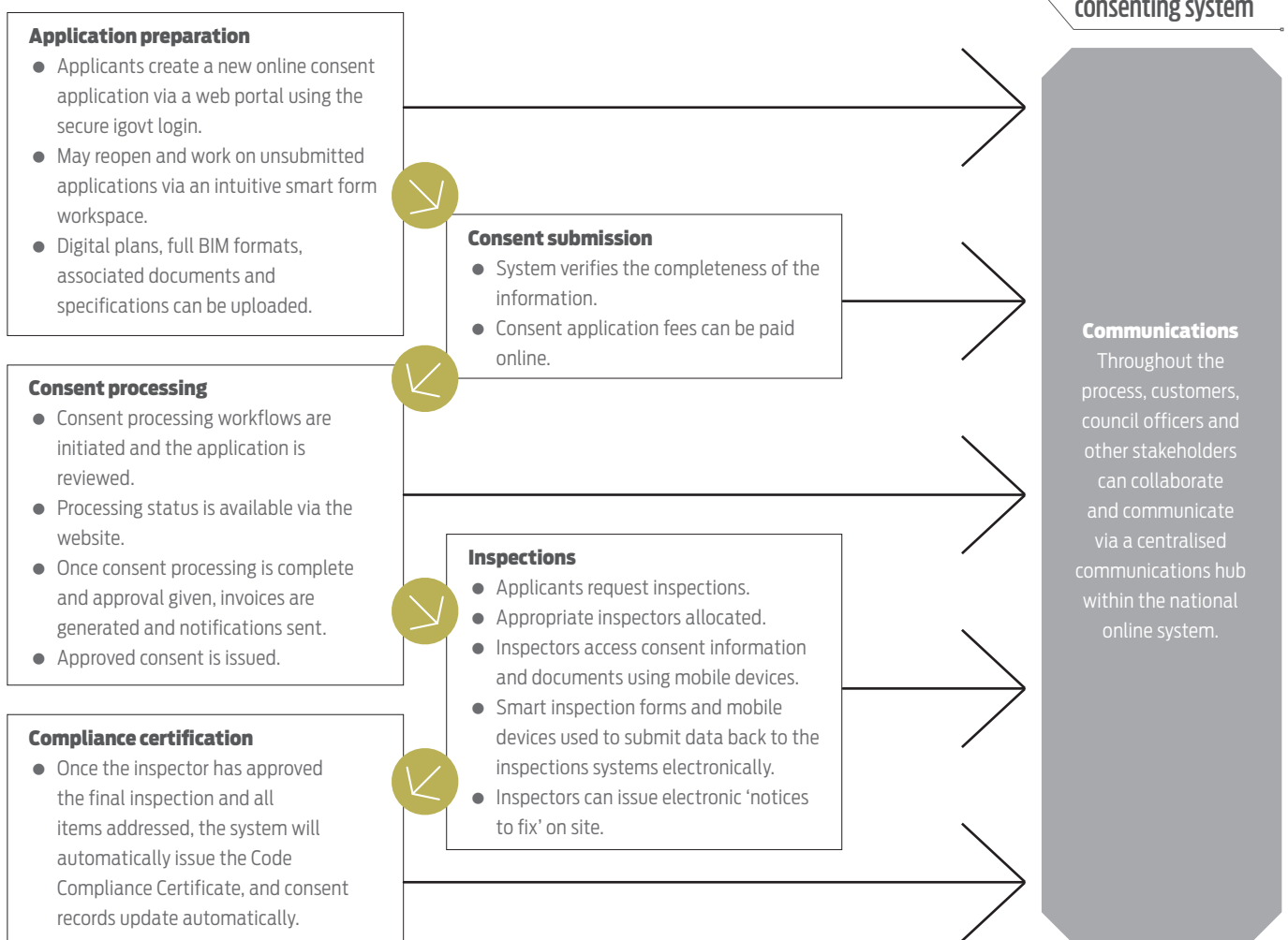
All BCAs will process the consent applications electronically, and the application can be worked on by all BCA processing sections at the same time. The system will also allow building inspectors to undertake inspections and, using smart devices such as iPads or tablets, to record information and use electronic stamps to confirm compliance with the Building Code and any conditions of the building consent.

The total projected direct minimum benefits of the national online consent system are \$67.3 million per annum. This includes time saved by applicants and BCAs and benefits to builders from the early issue of the Code Compliance Certificate.

BIM

BIM is digital software that generates a three-dimensional representation of the physical, spatial and functional characteristics of a building. It allows every participant

National online consenting system



in the design, construction and consenting process to view the proposed building in a virtual environment.

The data-rich information of BIM allows information critical to the integrity, design and purpose of the building to be analysed and validated before construction starts. BIM can detect clashes in design, which will reduce errors and rework. BIM information can be extended beyond 3D to include project scheduling and logistics (4D), project costing (5D) and life cycle management (6D).

An Australian review in 2010 estimated average cost savings by users of BIM to be 9.6% for architects, 6.4% for engineers, 5.5% for contractors and 5.5% for owners.

In New Zealand, the value of non-residential building consents issued in the calendar

year ended 31 December 2011 was \$3.64 billion. A 5.5% saving represents a potential saving of \$182 million if BIM had been used on those construction activities from the design through to construction stages.

Location-based information

Local and central government agencies such as LINZ gather information about the natural and built environment including what is on, under and above the land. LINZ also manages the cadastral database and Land Online, the land registration system. Adopting GeoBuild interoperability standards in its upgrade will improve access to and usability of all location-based information.

The use of location-based information added \$1.2 billion in productivity-related

benefits to the New Zealand economy in 2008. Estimates show that removing key barriers could have added a further \$481 million a year and generated an additional \$100 million in government revenue.

Wider uses for GeoBuild

Information in GeoBuild can also benefit emergency response services, enhance police services and assist government agencies in making better decisions.

An example is access to GeoBuild by a fire brigade on the way to a callout. They could use a tablet device to gain immediate access to information about the design, purpose and construction of a collapsed or damaged building, adding significant value to the planning of the rescue operation. ◀