



CENTRAL CITY PLAN

SUBMISSION TO CHRISTCHURCH CITY COUNCIL

16 SEPTEMBER 2011

BACKGROUND TO IPENZ

The Institution of Professional Engineers New Zealand (IPENZ) is the lead national professional body representing the engineering profession in New Zealand. It has approximately 12,000 Members, including a cross-section from engineering students to practising engineers, to senior Members in positions of responsibility in business. IPENZ is non-aligned and seeks to contribute to the community in matters of national interest giving a learned view on important issues, independent of any commercial interest.

The **Canterbury Branch** of IPENZ has approximately 1,800 Members from all engineering disciplines, with strong representation in civil, structural, transport, geotechnical and earthquake engineering. Many are employed by consultants, central government agencies, local authorities, and industry and academics institutions throughout the greater Christchurch and Canterbury area.

This submission was prepared with input from Members of the IPENZ Canterbury Branch and the broader IPENZ Membership.

SUBMISSION

This submission provides some general comments, then more specific comments on parts of the *draft Central City Plan* (the draft Plan). Comments on Volumes 1 and 2 of the draft Plan are presented together where applicable.

The IPENZ Canterbury Branch (we) do not comment on transportation in this submission as the IPENZ Transportation Group is also submitting on the draft Plan. We support the Transportation Group's views and recommend this submission be read alongside their submission.

GENERAL COMMENTS

We commend the Christchurch City Council (the City Council) for creating the draft Plan (including distilling the "Share an Idea" concepts) in such a short period of time.

We present some general comments below regarding resources, relationships and analysis.

RESOURCE LIMITATIONS

We recommend the City Council carefully consider the resources available before committing to projects. The financial and human resources available to deliver projects in Christchurch are limited and, we believe, could limit the feasibility of projects and their proposed timeframes. We therefore urge the City Council to undertake feasibility studies for the individual proposed projects and the overall package of proposed projects to determine their viability, given the financial and human resources available in the timeframes required. Particularly relevant to this will be probable labour shortages in professional engineering services and the engineering and building trades.

THE CITY'S RELATIONSHIP WITH SURROUNDING TOWNS

The Christchurch central city's rebuild needs to consider the interrelationships, contributions, and links to the city's wider urban areas and to surrounding towns and communities. These considerations should be undertaken as soon as possible so they can help shape central Christchurch's transport system. Similarly, the development of nearby Canterbury towns should be considered and incorporated into Christchurch city's development. We believe the City Council may find Canterbury towns can help solve some of Christchurch's post-earthquake problems.

FURTHER ANALYSIS

We consider some of the major decisions in this draft Plan require significant analysis. It is therefore important decisions are not committed to before this analysis is undertaken. We encourage the City Council to ensure this analysis is completed before future development is locked in.

SPECIFIC COMMENTS

The headings used below relate to those used in Volume 1 of the draft Plan.

THE BIG PICTURE

We concur with the vision that Christchurch's central city be "strong, vibrant and prosperous". We also support the focus (page 1 of Volume 1 of the draft Plan) on championing business and investment.

We also agree proposals for the Avon River area, the concept of a compact central business district (CBD) and a safe and resilient hospital. Further comments are provided below in relation to these changes.

We appreciate and support the City Council's "Share an Idea" campaign. We consider "Share an Idea" was an innovative campaign that ensured as many people could contribute their ideas as possible. We commend the Christchurch City Council for including the themes from "Share an Idea" on pages 5 and 6 of Volume 1 of the draft Plan. Their inclusion helps those who made submissions to see the link between what the community has said it wanted and what the Council proposes occur.

We note and agree with the implementation methods set out on page 8 of Volume 1 of the draft Plan. We have concerns about the implementation programme timeframe and the availability of resources to deliver the projects.

INTRODUCTION

We support the plan to rebuild the central city. We believe the central city is best centred on Cathedral Square as it maximises accessibility to the CBD and is in the best place to meet the various needs of Christchurch people.

We also agree with the five guiding principles presented on page 12 of Volume 1 of the draft Plan. We consider these principles vital for ensuring Christchurch becomes a vibrant and prosperous city.

THE WAY AHEAD

We note the process set out on page 13 Volume 1 of the draft Plan. We support the robust analysis upon which the final Plan will be based. We consider it vital that all relevant analysis, including geotechnical engineering reports, market demand analysis, transport analysis and feasibility studies, is reviewed and considered prior to the Plan (include Volume 2 of the draft Plan) being finalised. Again, we encourage the City Council to ensure feasibility studies are undertaken before this occurs.

PAST PRESENT FUTURE

We note the comment on page 21 of Volume 1 of the draft Plan that “about 80 listed heritage buildings have been demolished in the Central City” and understand this number is increasing. IPENZ has an interest in a list of items that are included in New Zealand’s engineering achievements of outstanding or special heritage significance. While not necessarily in the central city that list includes the following items.

- The Addington Water Tower. This is a Category I historic place (Record no. 5390), which we believe has survived the earthquakes well. Built in 1883, this tower was one of the world’s first structures in reinforced concrete and was specifically designed to resist earthquakes.
- The Canterbury College School of Engineering Laboratory. This is a Category I historic place (Record no. 7301). We understand it may not have survived the earthquakes.
- Fort Jervois, Ripapa Island. This is a Category I historic place (Record no. 5306).
- A K Class Locomotive Kb 968. This was the last of the K series to run in service, and is stored at the Mainline Steam Trust, Sockburn.
- The Lyttelton Railway Tunnel. This is a Category I historic place (Record no. 7172).
- The Public Works Department Building in Blenheim Rd, Sockburn. This is a large engineering workshop that has manufactured much of the South Island’s present-day heavy engineering infrastructure.
- The Telecom Museum, Ferrymead. The Museum and some displays were damaged in the earthquakes. We understand the Museum is being restored to a limited extent.

While we acknowledge the loss of a number of Christchurch’s heritage buildings, we note Christchurch still has a number of items of heritage value that the city needs to retain and celebrate.

IPENZ celebrates its centenary in 2014. Recognising and preserving engineering heritage will be a significant part of the centenary activity and IPENZ proposes working with the City Council in relation to this.

REMEMBERING/MAUMAHARATIA

We note the proposal for an Earthquake Preparedness Information Centre (EPI-Centre) to be created. We believe such a facility would be a positive way of remembering the events that have occurred. We also believe the EPI-Centre would act as a useful education facility to ensure current and future generations are aware of what has occurred, what has changed in Christchurch and how to be prepared for future disasters. We support including a strong engineering component to the EPI-Centre. This would include the building incorporating state-of-the-art engineering design and presentation of information about earthquake engineering.

GREEN CITY

We agree with the targets set out on page 29 of Volume 1 of the draft Plan. We particularly support the concept of a more accessible, connected city that uses green technology. Our comments on the specific projects are set out below.

Greening Cathedral Square

We generally support the proposals for Cathedral Square. We note the importance of ensuring the area is well connected and that new buildings are in-keeping with the area.

Eco streets

The draft Plan proposes Christchurch have ecostreets with green infrastructure. We support this proposal. We consider the ecostreets, particularly the use of swales and permeable paving, will assist with stormwater management and increase the water quality of the associated water bodies.

District heating

We note the proposal that the use of district heating be investigated. We support this action. We believe district heating could provide significant efficiency gains, but economic viability will need to be considered. This project would be of national interest and therefore the study could be useful for other cities to refer to and consider.

Green technologies

We note and support the three proposals relating to green technologies, as set out on pages 43 and 44 of Volume 1 of the draft Plan. Green buildings are more sustainable than conventional buildings and have increased efficiency in terms of water and energy use.

We note and support proposed changes set out in Volume 2 of the draft Plan to enable building sustainability. We also support the proposed discretionary activity status for those buildings that cannot achieve the Build Green Christchurch standard for some reason.

DISTINCTIVE CITY

We note and agree with the principle that the central city will have a distinctive and high-quality built environment. We commend the City Council for acknowledging that there is “no one project that can deliver a well-designed Central City”.

A low-rise city

We note the intention of the plan to limit the central city buildings to a height of only seven storeys. We have mixed views regarding this proposal. There are no technical reasons for choosing low-rise in preference to high-rise for the city centre. Furthermore, a low rise city may not be economically viable in the years ahead. However we do understand desire of some in the community for low-rise buildings and the potential urban design benefits.

There are acknowledged geotechnical challenges to building in Christchurch. However, there are proven engineering solutions available which may result in the optimum economic solution being of significantly greater height.

Current engineering standards have been demonstrated to meet the life safety objectives of the building code, although subsequent demolition may have been required. While undesirable, this was an expected consequence of the underlying fundamentals of the building code. However it should be noted that engineers are able to provide greater levels of property protection if required, using new well researched design techniques, as well as the lessons learnt from the earthquakes.

An alternative approach to setting a height limit would be for the City Council to set a development density limit. This could allow for taller buildings, with these set back from streets to allow greater light penetration and green spaces. Such an arrangement could also help break up wind flow, which would thereby reduce wind tunnels.

We recommend the City Council ensure city centre design balances what the community (and those working in the CBD) want and need, with the long term needs of an economically viable CBD.

Given this, we recommend the proposed changes to maximum heights (as set out in Volume 2 of the draft Plan) be delayed until consideration is given to alternatives such as development densities and that further consideration be given to the CBD's long term needs.

Strong and resilient buildings

We support the central city being rebuilt with strong and resilient buildings, as set out on page 50 of the Volume 1 of draft Plan. We also support the City Council investigating a recognition system for buildings that meet or exceed the building code.

We encourage the City Council to work with building developers and their technical advisors to support the use of base isolation for the seismic protection of all buildings in the CBD. Base isolation works particularly well for buildings that are less than seven to ten storeys. It can also provide an appropriate level of protection for the building fabric as well as business continuance. We understand the cost of base isolation adds about four per cent on the cost of a similar sized building without base isolation. This investment is well worthwhile for buildings in Christchurch, particularly given the level of possible damage reduction over the potential life of buildings, and would give building occupants assurance of earthquake safety.

Our history, our heritage

We note and support comments regarding Christchurch's heritage. In this respect we support the recognition of specific streets that have particular importance to Christchurch's character and heritage.

We agree with the Heritage Framework (presented on page 52 of Volume 1 of the draft Plan) and the proposed review of the Council's Earthquake-Prone, Dangerous and Insanitary Buildings Policy. We are aware of the complexities involved in the strengthening of buildings but believe the CBD's remaining heritage buildings should be retained where possible and note that engineering solutions exist to strengthen all buildings. We also support the proposed changes set out on pages 175 to 180 of Volume 2 of the draft Plan that relate to heritage items.

We concur with the retention and reuse of materials as proposed on page 54 of Volume 1 of the draft Plan. We believe the reuse of material from demolished heritage buildings is an appropriate way to acknowledge the earthquakes and encouraging efficiency in the rebuilding of the city.

Height and human scale

As indicated earlier in this submission, we have mixed view regarding the CBD being low rise. We can see the advantage of a lower-rise central city as it will enable sunlight penetration and have other benefits, as set out on page 56 of Volume 1 of the draft Plan. However, we also think there are no technical reasons that make a high-rise central city infeasible. We encourage the City Council to consider the long term before choosing a low-rise city in preference to high-rise for the city centre.

Good urban design

The IPENZ Canterbury Branch supports the use of good urban design to recreate the central city. We note the importance of urban design taking a holistic approach and involving all stakeholders, including infrastructure and utility operators. We agree with the proposed change to Policy 12.4.6 to encourage good urban design.

We note the proposed consultation with an urban design panel. We recommend clause (a) (presented on page 49 of Volume 2 of the draft Plan be amended to include IPENZ. IPENZ is a signatory of the Urban Design Protocol and its Members would be well-placed to provide input to the urban design panel.

We also note the proposed general matters presented on page 50 of Volume 2 of the draft Plan. We note and generally concur with these matters and the potential case-by-case development which could enable flexibility of design.

CITY LIFE

We note and support the comments made on page 77 of Volume 1 of the draft Plan regarding the importance of tertiary education to the city. We agree with the City Council taking steps to assist the tertiary sector as it rebuilds its facilities.

We also concur with the measures listed on page 80 of Volume 1 of the draft Plan to enable affordable housing. We consider it vital that people be attracted to live in the central city as their presence adds vitality to the area. In addition, attracting people to areas helps ensure residential units are occupied, thereby ensuring building owners and shops in the area can flourish.

TRANSPORT CHOICE

The IPENZ Canterbury Branch agrees with the IPENZ Transportation Group's submission and has no other comments to make in relation to transport.

MARKET CITY

The IPENZ Canterbury Branch note and support the targets presented on page 103 of Volume 1 of the draft Plan. We particularly support the Enterprise Precinct and Innovation Campus and the Smart city proposals presented on page 112 of Volume 1 of the draft Plan. We believe the proposals will help attract companies to Christchurch, thereby helping to restore Christchurch's economy. The campus concept in particular will encourage businesses to form clusters. These clusters could then encourage better integration and cooperation between the private sector, academic institutions and others.

We think the proposal on page 107 Volume 1 of the draft Plan for the CBD to be compact is appropriate. We believe that the relationship between the CBD and the suburbs has changed and therefore a smaller, more compact CBD is more appropriate. We also agree with introducing sub-objective (a) in Objective 12.1 (in Volume 2 of the draft Plan) which reinforces the role of the CBD as Christchurch's primary commercial area. We therefore support the introduction of sub-objective (a) in Objective 12.1 and the other related changes proposed in Volume 2 of the draft Central City Plan.

IMPLEMENTATION

The IPENZ Canterbury Branch agrees with the partnership approach proposed in the draft Plan. We think the rebuild will require the input and support from many groups, so partnership is vital.

We note the summary of projects and staging overview presented in the draft Plan. As indicated in our General Comments, we have concerns regarding the feasibility of delivering such a large group of projects which may be constrained by limited resources and funding. We think the Council needs to undertake feasibility studies, then allocate funding and resources and finally determine timeframes. The current proposed staging presented on page 125/126 of Volume 1 of the draft Plan looks ambitious bearing in the mind the consultation, analysis, design, decision-making, consenting, funding, procurement and construction processes required for each of the major projects.

We concur with the proposed infrastructure programme. Reconstructing and repairing the infrastructure will be vital to enable the city to operate well and to encourage people to live, work and play in the central city. This programme must therefore go ahead and is, in our view, more important than some of the other projects proposed in the draft Plan.

CONCLUSION

The Canterbury Branch of IPENZ appreciates the opportunity to make submission.

We are willing to be consulted on engineering issues relating to the Central City Plan.

We do not wish to be heard at the public hearings.

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