

EVALUATING THE INTERNATIONAL BUILD BACK BETTER FRAMEWORK IN THE POST-DISASTER REBUILD AND RECOVERY EFFORT IN CHRISTCHURCH

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Abstract

The concept of “Building Back Better” (BBB) first emerged during recovery efforts following the 2004 Indian Ocean Tsunami, for the purposes of improving traditional reconstruction and recovery methods. It presents a practical guideline with the intentions of improving the community’s physical, social and economic conditions to create an overall resilient environment in preparation for future events. This research involved an intensive literature review on BBB principles for disaster recovery and resilience as well as a site visit to Christchurch to gather both qualitative and quantitative data. The data was gathered through semi-structured interviews and carefully constructed questionnaires with the local businesses and other relevant institutions (both governmental and private). Analysis of the collected data showed evidence that there were some traces that reflected upon the BBB principles such as multi-hazard based land-use planning and psychological and social recovery. However, there were many opportunities to further integrate BBB principles to improve New Brighton’s resilience against natural disasters.

1. Introduction

Despite the dramatic increase in both frequency and magnitude of natural disasters over the past few decades (Hoeppe, 2007), traditional recovery methods are continued to be implemented. These methods remain inefficient and are poorly managed, which are in dire need of improvement (Halvorson & Hamilton, 2010).

Since September 2010, a series of large earthquakes struck the Canterbury region causing detrimental impacts on the economic, social and natural environments in the Christchurch Central Business District and to the surrounding suburbs (McSaveney, 2016). The on-going aftershocks, in addition to the main shocks, have caused a disrupted environment making recovery efforts difficult.

New Brighton is a coastal suburb of Christchurch located about 8km east of the city centre. New Brighton and its neighbouring suburbs experienced severe damage following the earthquakes, mainly due to liquefaction. As a result, thousands of residents were relocated to different suburbs, as the government ‘red-zoned’ areas declaring the land inhabitable. These developments isolated New Brighton from the rest of Christchurch which caused major problems in the economic downfall of the suburb.

Traditional methods that attempt to rebuild the environment and infrastructure to its existing state often re-creates the same vulnerabilities that existed earlier

(Lyons, 2009). Therefore, “Building Back Better” attempts to take a holistic approach to recovery that aims to improve the community’s physical, social and economic conditions during post-disaster reconstruction and recovery activities. Ultimately, it attempts to create an environment to a new state of normalcy to ensure long term resiliency (Mannakkara, 2014).

This paper consists of the second part of a two-part joint report which analyses the current disaster recovery responses and methods in New Brighton and evaluates them against the international BBB principles. The report will contain the literature review conducted and will go into depth on the methodology adopted for this study. Part Two explores and discusses the results applicable to the last four principles that fall under the BBB framework.

2. Scope

Due to both limited time and resources, the scope of this research was refined down to the evaluation of recovery methods in just New Brighton, a suburb of Christchurch. A sister research team evaluated the recovery efforts in another suburb, Sydenham.

3. Objectives

The main objective of this study was to better understand the correlation between the successfulness of recovery and the adoption of BBB best-practices, in New Brighton, in-line with the international Build Back Better framework developed by Sandeeka Mannakkara and Suzanne Wilkinson in 2014.

The following sub objectives were considered to assist in achieving the goals of the research, to:

1. Understand the international BBB framework
2. Examine the social and economic recovery of businesses in New Brighton
3. Determine best-practices that can be translated from BBB principles to assist the recovery in New Brighton

4. Literature Review

An intensive literature review was carried out that primarily focused on the publications and research surrounding the BBB framework. The Part Two report discusses sections of the BBB framework applicable to the last four principles: Community Recovery and Effective Implementation. It also outlines details of the sequence of earthquakes that occurred in Christchurch as well as addressing plans from the New Brighton Centre Master Plan (NBCMP).

4.1. Christchurch earthquakes

During the early hours on Saturday 4th September 2010, an earthquake of magnitude 7.1 struck the Canterbury region (McSaveney, 2016), just 37 kilometres west of Christchurch near the town of Darfield. Fortunately, there were no casualties, but the cost from damages was very large, especially in Christchurch. Only a few months following, on Tuesday 22nd February 2011, another earthquake struck the Canterbury region. However, this time an earthquake of magnitude 6.3 struck just 10 kilometres south-east of Christchurch's central business district (McSaveney, 2016). It claimed the lives of 185 people and brought much more structural damage all over Christchurch. Unlike the first, this one came with an additional problem which was liquefaction. This led to many houses being demolished and red-zoned. These sequences of events have left Christchurch in a chaotic and disorientated state that left them vulnerable and difficult to recover from.

4.2. Build Back Better Framework

The BBB framework consists of guidelines and principles, applicable during post-disaster recovery and reconstruction, that aims to improve the overall resilience of a community in preparation for the future (Mannakkara, 2014).

The concept of the BBB framework first emerged during recovery methods following the 2004 Indian Ocean Tsunami (Lyons, 2009), to refine traditional reconstruction and recovery methods. It signifies inducing resilience into communities, allowing it to adapt, to build communities to better than its original state (Mannakkara & Wilkinson, 2016). It has since been developed into a framework, through lessons learnt from case studies, and has been recently published in 2014 as the International BBB framework by Sandeeka Mannakkara in her thesis.

Key concepts proposed to achieve Build Back Better during reconstruction and recovery can be grouped into three core categories that form the framework, which are:

- Disaster Risk Reduction
- Community Recovery
- Effective Implementation

These categories are broken down further into eight governing principles, the categories and principles are illustrated in Figure 1.



Figure 1: Building Back Better framework

4.2.1. Community Recovery

Community Recovery involves improving the long term social and economic conditions by supporting livelihoods and regenerating the economy of affected communities. Chamlee-Wright and Storr (2009), Chang (2010) and (Kennedy, 2010) all identified that keeping the community together by involving them in collective activities, such as social gatherings and the participation in recovery work, in addition to psychological support would best help recover from the trauma people incurred (Mannakkara, 2014). The guiding principles for this core category were: Principle 4 – Psychological and Social recovery and Principle 5 – Economic recovery.

The impact of disasters on a community's psychological state and social life is less visible, compared to the noticeable damage to the built environment, yet still has a big significance on the overall recovery of an affected community (Mannakkara & Wilkinson, 2013). The fourth principle attempts to

provide solutions to psycho-social issues that arise during post-disaster reconstruction to improve the overall recovery process of the community. It focuses on providing fast solutions in an attempt to re-establish a sense of normality in the community as soon as possible through community support and community involving activities (Mannakkara, 2014).

Businesses and income-generating industries become disrupted in the event of a disaster which damages the economy of the community. This leads to issues such as high inflation rates and poverty (Mannakkara & Wilkinson, 2012a). The principle, Economic recovery, refers to the propositions developed to enhance the post-disaster economic recovery of affected communities. It has been proposed that this can be implemented through economic recovery strategies, critical funding & decision making and training and finally providing both business support and promotion.

4.2.2. *Effective Implementation*

A common issue in post-disaster recovery is the difficulty in coordinating for numerous stakeholders, determining their specific roles to avoid duplication of activities (Mannakkara, 2014). The last core category, Effective Implementation, addresses this issue by implementing efficient and effective propositions to assist in Risk Reduction and Community Recovery. These include the implementation of the last three principles: Principle 6 – Institutional mechanism, Principle 7 – Legislation & Regulation and Principle 8 – Monitoring & Evaluation.

Often post-disaster recovery and reconstruction activities are required to be done in a short period of time involving many stakeholders (Mannakkara & Wilkinson, 2016). Therefore, Principle 6 emphasizes attempts to select an appropriate institutional mechanism to ensure speed and quality in the rebuilding efforts, all the while facilitating collaboration amongst the stakeholders to produce a unified outcome. In order to achieve this, the two methods are to appoint the appropriate organization, whether it be governmental or a new authority, and to carefully monitor the level of centralization the body will possess over the recovery process.

In the aftermath of a disaster, the recovery and reconstruction process of a community requires careful consideration and successful implementation. These should help minimize further disruption to the affected lives of the community and help develop a more resilient community (Mannakkara & Wilkinson, 2013). Principle 8 implements efficient and effective propositions on recovery activities to avoid unnecessary delays and to ensure the conformity of BBB-based approaches. This implementation comes down to legislation and regulations that specifically target at compliance and facilitation.

The last principle, Monitoring & Evaluation, for the BBB framework provides a system to overlook and monitor the implementation of the BBB concepts and

framework in recovery programmes (Mannakkara & Wilkinson, 2013). Recovery plans should have a long-term view and should have the necessary facilities in place to support the rebuild of communities. The propositions for this implementation were a result of amalgamating literature and case studies, which came out to be: monitoring and evaluation for both compliance and improvement.

4.3. **New Brighton Master Plan**

The development of a master plan to support the recovery and rebuild of New Brighton's commercial centre was first brought up and approved in April 2012 (Suburban Centres Programme, 2015). They envisioned for New Brighton to be a revitalized, vibrant centre to attract people to live, work and play in New Brighton, for it to be the "centre as the heart of the community and be the key activity centre for the eastern suburbs" in Christchurch.

The Master Plan is visualized as a 'big picture' theme and proposes themes to address the main issues of the centre. The big picture themes are:

1. Consolidation of the commercial area for a more vibrant centre
2. Precinct development with mixed uses to improve user experiences
3. Reinforced connections through the centre between the river and the sea
4. Enhanced circulation and flow of pedestrian and cyclists to and through the centre

The Masterplan's framework is an integrated recovery planning guide which consists of the following principles: economy and business, movement, natural environment, built environment and the communities wellbeing, culture and heritage. Each principle comes with its own goals to achieve in the recovery of New Brighton.

With their goals and objectives in mind an analysis can be done to evaluate the best way to incorporate the BBB principles to the Master Plan to help the overall resilience of the community for future disasters and risks. The incorporation will consider the comparison of common issues presented in the two recovery methods.

5. **Methodology**

For this study, a mixture of both qualitative and quantitative case study was adopted for the purposes of collecting a more enriched and comprehensive data set. This provided data with more certainty and validity. In addition, it provided a degree of methodological flexibility that helped elucidate more information, than just quantitative data, to meet the criteria's set out in the objectives.

5.1. Data Collection

A month prior to the visit down to New Brighton in August 2017, the Participant Information Sheet (PIS) and Consent Forms (CF) were emailed to businesses that had accepted the proposal to be interviewed and participate in the study. During the visit, all interviewee participants were given the Consent Form in hard copy to read and sign before the interview began, giving us permission to record and proceed.

During the visit, carefully semi-constructed interviews were conducted with all agreed participants, including non-profit organizations. In addition, businesses were directly approached to see if they were available for interviews, and questionnaires were handed out to those that did not have the time. Businesses of various nature and sizes were randomly selected in the sample to ensure variance and fairness in the data.

5.2. Data Analysis

Recordings of the interviews and the transcribed documents were sent, via email, to those participants who wishes to review and get a chance to edit them if necessary. Then, the collected data was analysed by coding appropriate information under the identified BBB principles. The results gathered were cross-referenced with data from literature, other interviews and documents. To ensure the data collected remained reliable and maintain validity, no information was shared between the participants.

5.3. Profile of interviewees

Table 1: Profile of interviewees

Interviewee Number	Organization	Type
1	New Brighton Library	Community
2	Grace Vineyard Church	Community
3	New Brighton Project	Community
4	Phad Thai	Cuisine
5	Pierside Café and Bar	Cuisine
6	Happy Feet Shoe Repairs	General

7	Bin Inn	General
8	Christchurch City Council (CCC)	Government
9	Development Christchurch Limited (DCL)	Government

6. Results

It was found that there were a few organizations that played a vital role in the recovery of New Brighton during recovery and reconstruction activities. However, the main institutions that were responsible for the resilience and recovery of economic & social growth for businesses in New Brighton were Christchurch City Council and Development Christchurch Limited.

Although, they both played a big part in the recovery it was mainly Development Christchurch Limited that implemented plans to rebuild New Brighton. Christchurch City Council were more focused on regenerating the city of Christchurch as a whole and so they specifically developed the agency to look over New Brighton.

6.1. Build Back Better

The analysed data were categorized under the appropriate BBB principles. The post-disaster reconstruction and recovery methods found were evaluated against the BBB framework to determine how much their procedures were in accordance with the BBB guidelines. As mentioned earlier, this Part Two report only discusses the last four principles of the BBB framework.

6.1.1. Principle 5 - Economic Recovery

Long before the earthquakes, New Brighton was the only area in New Zealand that had shops open on Sundays. Gradually, as shops around the country started to open six to seven days New Brighton started to experience a gradual economic decline as the 'marketing boom' died down. Shortly after the earthquakes struck, the local authority had to 'red-zone' certain areas that were deemed too damaged, due to liquefaction, to be built on over the short to medium period, shown in Figure 2. This created a physical gap that isolated New Brighton from its neighboring suburbs. In addition to the implementation of these red-zones, there was a massive decrease in population of New Brighton and its surrounding areas as residents and businesses decided to move out.

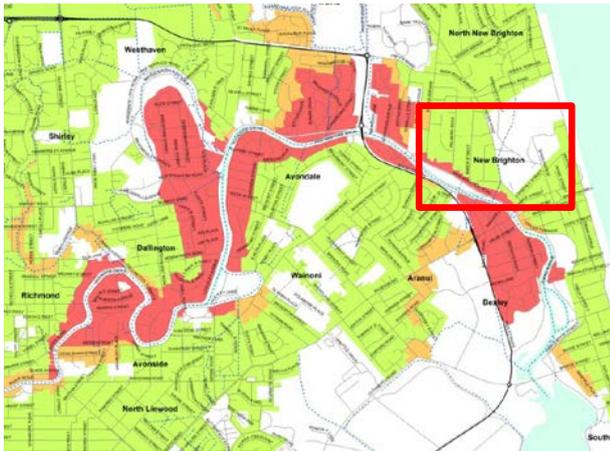


Figure 2: Map of red-zones

The general opinion of business owners claimed that they were astounded that business could fall further than it had been prior to the earthquakes. The manager from Bin Inn claimed that their customer numbers reduced from about 1700 customers per week down to a crippling 670 following the earthquakes. In addition, majority of businesses in New Brighton had to change their business strategies and work much harder to keep their businesses going. It was agreed upon by many businesses that the reason for the further decline was due to the red-zones. There were very strong comments such as “A lot of it is due to red-zones. People move out with the intention of moving back into the area, but they tend to lose that connection with the area over time as they settle into their new suburbs” and “I would love to relocate if it wasn’t for the fact that I’ve grown up here my whole life and my attachment to the area is too strong”. Despite the government providing some financial support during the initial periods following the earthquakes, through subsidized wages and other grants, many businesses failed to get back up on their feet and were forced to close.

The New Brighton Seaside Markets, shown in Figure 3, was something that the New Brighton Project developed to promote business growth and support in the suburb. Set up along the city centre, booths are put in place for businesses, both in and out of New Brighton, to sell goods. It was said to have been developed to “create a space where people could go and enjoy the company of each other in their own environment. To appeal to businesses outside of New Brighton to express the potential here”.



Figure 3: New Brighton Seaside Markets

The Christchurch City Council also provided valuable information on the economic recovery of New Brighton. Their intentions for the master plan were to condense the New Brighton business area, as they thought it was more viable, in terms of the whole economics, for the retail area generally. Although, there were a few agencies and programmes that were developed, such as Recover Canterbury, to be the ‘contact person’ who would offer continuity and co-ordination to local businesses. Unfortunately, Christchurch City Council stated that New Brighton was “a really tricky area of Christchurch for the council to deal with at the moment”.

6.1.2. Principle 6 – Institutional Mechanism

Although, both Christchurch City Council and Development Christchurch Limited’s intentions were to implement efficient recovery and reconstruction methods in New Brighton, it was found that the primary organizations responsible for facilitating the collaboration of stakeholders were local non-profit organizations.

The two-main local non-profit organizations responsible were Grace Vineyard Church and New Brighton Project. This was confirmed by multiple businesses that were interviewed, shown in Table 1, and also by the questionnaires. The consensus was that although there were opportunities provided by the local council, for those seeking it, it was these two organizations that took initiative and implemented recovery activities in New Brighton.

New Brighton Project, one of many non-profit organizations in New Brighton, primarily are responsible for running the Seaside Markets in the weekend. The Seaside Markets has acted as one of the most influential recovery method there’s been in New Brighton and New Brighton Project are solely responsible for facilitating and gathering businesses from both within and outside of the area. They make sure to keep clear communication

with the booth owners as to not create unnecessary competition amongst them and local businesses. Furthermore, they were also involved with helping network the local businesses and groups during recovery. Initially, following the earthquakes they, along with Grace Vineyard Church, were the organizations that people could rely on to consult with for whatever they needed. New Brighton Project would hear out the request and complaints and were able to refer them to whom they believed was the best agency for them.

Of the two major local non-profit organizations, Grace Vineyard Church was considered to be the most influential organization that really held the community together after the earthquakes. Their building, having survived the earthquake substantially adequately, was requested by the council to be the local hub for New Brighton, to act as a facilitator. Both individuals and groups could come to the church for any problems or requests that they encountered or were experiencing. It quickly became recognised that the building and the church played a very big part in managing the stakeholders during recovery that they were given funds, from both private and governmental, to ensure operations ran smoothly.

6.1.3. Principle 7 – Legislation and Regulation

Currently, it was found that there were not many legislations and/or regulations being implemented to assist with the current recovery and reconstruction methods in New Brighton. Many businesses also stated that even if there were any new laws they were not aware of them.

The only legislation that was gathered from the visit, that was implemented solely for the purposes of recovering the state of New Brighton were building standards. This legislation covered what the specific requirements were for new buildings that were being built. One in specific mentioned by the Christchurch City Council was that buildings had to be built at a specific height above sea level due to flood risks. However, being that this legislation was only for new buildings the majority of damaged buildings that were being renovated were built back to the same structural resiliency prior to the earthquakes, mainly due to financial issues, leaving them vulnerable to future disasters.

6.1.4. Principle 8 – Monitoring and Evaluation

Following the earthquakes in 2010 there were many master plans that were developed by the council and governmental authorities at an attempt to recover New Brighton, including the latest New Brighton Master Plan by the Christchurch City Council. However, it was found that despite having all these plans, the community as a whole does not believe that much has been implemented and that the little amount that had been done was not enough. This was revealed through the questionnaires, which can be seen in Figure 4.

HOW SATISFIED ARE YOU WITH THE CURRENT RECOVERY PROCESS OF NEW BRIGHTON?

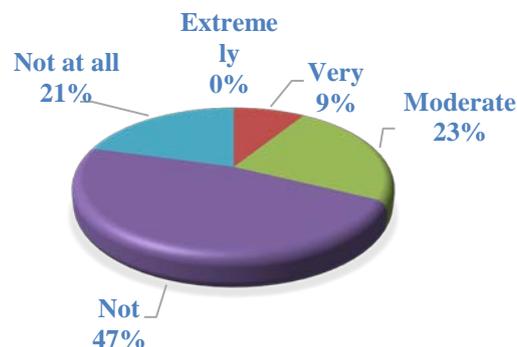


Figure 4: Pie chart representing business satisfaction of recovery in New Brighton

Currently, the only legitimate method of monitoring and evaluating the recovery and reconstruction methods in New Brighton is through the performance of the New Brighton Seaside Markets. As the markets were seen as a business opportunity for both businesses and citizens outside of New Brighton it promoted a lot of growth and brought a vibrant environment back into the suburb. New Brighton Project wants to change the way people view New Brighton and bring their reputation back up. “We now have a good reputation and it has even been voted the 3rd best market in Christchurch recently”, stated the manager of the Seaside Markets. They strongly believe, in an overall sense, that the performance of the Seaside Markets relates to the performances seen in local businesses in New Brighton.

Many businesses, and the community, explained that they felt neglected from the rest of Christchurch. Even going to lengths of creating social media pages, such as the People’s Independent Republic of New Brighton, to try and influence the council to take action. They strongly believe that the only method of monitoring and evaluating that they seem appropriate would be to physically see improvements to the community being made, rather than just mentioning methods of recovery. When asked what they would consider as an indicator of improvement, there were comments such as “when the place looks aesthetically more pleasing”, “when the plans are properly implemented” and “when the recovery activities implemented actually benefit the community”.

However, it was found that the council had in fact not been ignoring New Brighton in any means and that they had actually implemented numerous methods of monitoring and evaluation schemes. The biggest method would have been that the Christchurch City Council had developed the agency, Development Christchurch Limited, just to have them implement and monitor the

master plan in New Brighton. In addition, regeneration metrics were set up to assess the current recovery and to develop or implement new methods if need be.

7. Discussion

The discussion section, provided below, should be acknowledged in conjunction with the Part One report in order to get an elaborate understanding of the research.

7.1. Community Recovery

An effective economic recovery method, especially for businesses, is the speed of recovery. Making sure businesses are able to operate and to support growth in the community to attract more customers, both in and outside of New Brighton, as soon as possible gives them the best chance of recovering fully to their original state and to maintain an economically stable community. Although, it has almost been six years where businesses have financially struggled to get by, it is not too late to achieve a full recovery of the economic state of New Brighton.

Although, until now there had not been much implementation of the New Brighton Master plan, there has been few projects being undertaken to initiate the full recovery of New Brighton. These new projects could very well close the gap of popularity in New Brighton and cause a dramatic increase in residents in the suburb. As attempting to fix the red-zones is something that will most likely be unrealistic, in the near future, implementing these new projects could very well be able to rejuvenate the poor economic state of New Brighton.

In addition to these projects, there will be a need for specific plans for funding and financial decision-making to be used in conjunction, to facilitate a faster and high-quality outcome for New Brighton.

7.2. Effective Implementation

One of the most common issues with post-disaster environments and the stakeholders involved is the difficulty in coordinating all the stakeholders to produce a unified outcome (GoSL & UN, 2005). The lack of guidance leads to disjointed participation from stakeholders with insufficient knowledge of the local community, promoting personal agendas which may conflict with the interests of the affected community (Batteate, 2006).

From the analysis, it became very distinct that there was a disjointed effort from both the local community and businesses with the local council. Although the council had implemented parts of the master plan, they weren't necessarily parts that the community as a whole believed was necessary or beneficial. This was clearly due to the lack of communication between the two stakeholders and is something that needs to change immediately in order for high quality results to be achieved. Both New Brighton Project and the Grace

Vineyard Church being the voice and representatives of the New Brighton community, Development Christchurch Limited, the council's representative for New Brighton, could effectively approach these organizations to discuss the effectiveness of current methods and improvements that can be applied for the future. The collaboration and direct communication between these stakeholders could, with confidence, produce a unified master plan and implementation that would benefit all stakeholders involved.

As discussed in the results section, there were not many regulations and legislations that business owners and the community were aware of that specifically assisted in the recovery of New Brighton.

The absence of legislation and regulations, specifically to aid recovery in New Brighton, can be shown in the slow progress that has been developed following the earthquakes. It has shown slow economic growth, lack of infrastructure resilience and environmental management, a few key factors that amalgamate to form sustainable development. There is a critical emphasis on the need for the Government to set strict rules and laws to prohibit this from continuing. There has been some new building codes for new developments but there needs to be customized codes that are specific to New Brighton and their current conditions to not only rebuild their building but to create a more resilient structure in preparation for future events. A minor but an important aspect for the community, there needs to be a more structured enforcement of the police in New Brighton. The lack of enforcement has resulted in an increase in crime rates and the lack of respect people have for the property in New Brighton. It does not necessarily have to be an extremely threatening law but needs to be strict enough so that people take better care of the environment in the suburb. The addition of the laws to support the aforementioned factors should eventually lead to a more stable and increasing economic state of New Brighton.

Apart from the regeneration metrics, that was recently published, there seemed to be a lack in monitoring and evaluating indicators in New Brighton following the earthquakes.

Consequently, there is a need to develop an efficient long-term plan as well as ways to measure the effectiveness and successfulness of the recovery occurring in New Brighton. Although, the council has come up with the metric, this will be due to change as the council and local community come to an agreement as to the new master plan. Once again, it comes down to clear communication between the involved stakeholders to create a unified solution. Further methods of data collection could be carried out to evaluate the best possible ways the BBB principles can be incorporated into the New Brighton Master Plan.

For this to be successful, there needs to be training programmes, and perhaps facilities, for disaster management planning to help improve and recondition current recovery methods as well as influence the adoption of the new recovery methods.

8. Limitations

This study was limited to the sample size and the available businesses during the weeklong visit down to Christchurch. The inclusion of other businesses, had there been more time available, could have given a better and more comprehensive representation of New Brighton's business sector.

In addition, due to the timeframe, the two government branches that were interviewed were conducted through the phone. The lack of availability at the time meant that we were not able to meet them in person and so perhaps a better flow of communication may have been had if interviews were done in person. As well as having the opportunity to contact and meet other governmental branches that were involved.

9. Conclusions

A both qualitative and quantitative analysis on the business sector of New Brighton were conducted using the BBB framework to assess the post-disaster recovery efforts in New Brighton. The analysis was carried out to evaluate whether the current recovery methods aligned with the BBB principles and also to determine how the BBB framework could be implemented further. The findings from this report, Part Two of a two-part report, addresses the last 4 principles of the BBB framework, starting from Principle 4.

The analysis shows that although there were some traces of BBB concepts involved with the current disaster management plans, it was seen that they did not meet the standards of BBB principles. Although, in the short term their current method may seem efficient, viewing for the resiliency in the long run this can be seen to have an adverse outcome. Therefore, the integration of BBB concepts to the current recovery efforts can be seen as a great opportunity to create a more resilient environment, and businesses, in New Brighton for the future.

In order to take a step in creating a more resilient environment, it is crucial that the discussions from both Part One and Two of the report are implemented effectively. Furthermore, it is important to note that the participation of all the relevant stakeholders, government and the willingness of the community plays a vital role.

It is with hope that this research initiates the governmental and private stakeholders to invest time, effort and money to ensure that resiliency of New Brighton is at its peak and to ensure the businesses continue to perform well. Even though the scope of this research only consisted of the recovery of businesses in New Brighton, we believe that this paper can assist others

in improving other sectors of affected environments and other suburbs in Christchurch.

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