

The promise of destruction

Christopher McDonald examines whether earthquake devastation helps cities reach new urban aspirations

Abstract

Natural disasters seem to provide unique opportunities for correcting planning problems and accelerating urban design initiatives. For a city on a fault line, a massive earthquake promises to deliver an urban tabula rasa: a blank slate on which a contemporary vision of an ideal city can be mapped out. However, as the examples of San Francisco in 1905 and Napier in 1931 demonstrate, the real possibilities for reconstruction are far more limited. While it is rare for a ruined city to be restored exactly to its former state, it is equally unusual for natural disasters to generate grand new urban designs.

San Francisco—Daniel Burnham's failed plan for a 'Paris' on the Pacific

By a remarkable coincidence, Daniel Burnham's master plan for a new San Francisco arrived at City Hall just days before the great 1906 earthquake. Eighteen months earlier, America's most eminent city planner had been engaged by a group of wealthy citizens to redesign the city's uniform street grid and recreate California's principal metropolis as a new Paris or Vienna. Burnham was so enamoured of San Francisco's peninsula location and picturesque terrain that he offered his services at no cost (Baker 1973 p49). Along with his associate Edward H Bennett, he took up residence in a purpose-built cottage near the summit of Twin Peaks overlooking the city. From this vantage point, he composed a network of radial and concentric streets, artfully adapted to the peculiarities of the site and the existing pattern of settlement (Hines 1974 pp181–187).

Burnham was well aware of the difficulty of implementing such a proposal in an established city, albeit one that was little more than sixty years old. He stressed that the design would need to be built incrementally and opportunistically over many decades. He even implied that the whole plan might never be realised. But he argued that a bold comprehensive design provided better preparation for the future than a more modest proposal constrained from the start by practicalities (Baker 1973 p49).

Then, on 18 April 1906, America's greatest urban catastrophe changed these prospects dramatically. All Burnham's original drawings and most copies of



Governor General touring Emerson Street, from Conly The Shock of '31 (p.145)

his plan were destroyed in the fires which followed the earthquake. Yet the destruction promised to accelerate San Francisco's transformation into a model of Beaux Arts urbanism. San Francisco's mayor and reconstruction committee adopted Burnham's proposal as a ready-made blueprint for the city's recovery. After the initial reactions of shock and grief had passed, the whole nation followed the plan's progress with eager anticipation. Burnham himself cut short a vacation in Europe and travelled to San Francisco to survey the destruction and promote his timely design (Moore 1921 p2). These events caused one commentator to confidently predict:

The execution of what was to have been a slow and gradual improvement and metamorphosis, necessarily made difficult by existing limitations, will now be rendered simple and direct through the ruthless and complete ravages of earthquake and fire.
(Sheffauer 1906 p94)

Before long, this optimism seemed ill-founded. Some of San Francisco's more pragmatic citizens argued that attempts to build a Paris on the Pacific would only delay recovery (Hines 1974 p190). In their view, the fastest way to rebuild the city and restart businesses was to retain the existing layout of streets and lots. As one prominent supporter of the plan wrote: 'It was the worst time to talk about beautification' (Moore 1921 p3). In the face of mounting opposition to the plan, city and state officials pleaded with Burnham



Presbyterian Church and Tennyson Street, from Conly The Shock of '31 (p.129)

to return permanently to San Francisco to supervise reconstruction and sell his vision to an increasingly sceptical public. However, despite the apparent opportunity which fate presented to him, Burnham declined these requests. He claimed that his professional commitments tied him to Chicago (Hines 1974 p193). But he may also have sensed that the devastating earthquake and the imperative to rebuild quickly actually *reduced* the likelihood of his master plan ever being realised.

Napier—the most modern city in the world

Napier had no ready made master plan when disaster struck on 3 February 1931. At the time, the city's main civic improvement initiative was a modest street widening scheme designed to adapt the town centre's tight nineteenth-century grid for use by motor traffic (Conly 1980 p172). But Napier did have a compelling precedent. Six years earlier, another California city had suffered a devastating earthquake. Santa Barbara used this opportunity to adopt a spurious yet romantic 'Spanish' identity. The town's makeover was far more successful than San Francisco's (Staats 1990 ppix-x). Within a decade, Santa Barbara became the most celebrated example of the emerging 'Californian' style of architecture.

For many people in Hawkes Bay, Santa Barbara provided the ideal model for Napier's reconstruction. Some proponents of this approach sought direct imitation: a simple transference of the Californian style to a superficially similar environment on the east coast of New Zealand. But those who studied this precedent in more detail might have noticed two important underlying features of Santa Barbara's recovery strategy. First, the town's renaissance did not involve dramatic alterations to its street pattern. The principal instrument

of change was a 'Board of Review' equipped with architectural guidelines based on a loose formulation of the Californian style (Staats 1990 pv). In this way, Santa Barbara's new identity emerged not from monumental public works but from an early form of design review applied incrementally on a case-by-case basis to many private reconstruction projects. The second salient feature of Santa Barbara's recovery was the fact that the post-earthquake Board continued a well-established campaign for aesthetic control. As early as 1901, a group of well-heeled residents called the Plans and Planning Committee were actively promoting an invented version of 'Spanish colonial' architecture as an agreeable style for Santa Barbara. Prior to the earthquake, the group had most effect among like-minded property owners in the town's wealthy hillside suburbs. After 1925, the style received official sanction, and the design review process ensured that it was much more widely adopted (Staats 1990 px).

Santa Barbara's experiment with aesthetic controls persuaded a group of Napier architects to work in a similarly uniform style. Assisted by the co-operative spirit that accompanied early reconstruction efforts, and encouraged by the town's Reconstruction Committee, many of Napier's architects adopted the plain flattened surfaces and horizontal emphasis now loosely defined as Art Deco (Wright 2001 pp 119–121). The style was modern but not revolutionary. In fact, the visual coherence of the new-look Napier resulted partly from a continuation of existing trends. Spanish colonial and art moderne motifs were already fashionable in pre-earthquake Hawkes Bay and, by 1931, a number of recently built structures displayed the hallmarks of Californian architecture.

Napier also had visionaries who saw the earthquake as an opportunity for fundamental changes to urban structure, not just an updated architectural vocabulary. Several plans were prepared for modern, comprehensively planned building complexes. One of these occupied an entire city block, and included a continuous first-floor terrace planted with lush vegetation. Another proposal showed a new entertainment centre spanning the city's Marine Parade (Wright 2001 p120). Soon after the disaster, some citizens even suggested abandoning the town centre and building a completely new commercial and cultural district on the opposite side of Bluff Hill (Wright 2001 p119). This idea might have exploited the broad expanse of flat land which was raised by the earthquake from the Ahuriri Lagoon. Here, an ideal city could be laid out without regard for Napier's nineteenth-century origins.

None of these ambitious plans came to fruition. Rubble from the town centre was used to extend a building platform along the seaward edge of Marine Parade. In time, this became the site for a chain of foreshore



Napier Town Centre, 1920s, from McGregor the Great Quake (p.10,11)



Napier Town Centre, 1933, from McGregor the Great Quake (p.60,61)

amenities. However, the city's famous esplanade began with the Municipal Baths and a band rotunda, both constructed well before the earthquake (Conly 1980 p173). Otherwise, the city's core was rebuilt largely on its existing footprint. Reconstruction accelerated the town's street widening programme. Property owners along Tennyson Street agreed to sacrifice three metres from their frontages to accommodate a more generous carriageway.

Three other streets were enlarged in similar fashion, and twenty-three corners were splayed to improve motorists' sight lines at intersections. Several central city blocks acquired service lanes (Conly 1980 pp 172–173, 184). These new alleys provide a fascinating example of urban 'retro-fitting' which could never have occurred without widespread destruction and rebuilding. But, taken together, the changes to the city's plan were pragmatic, localised and superficial. By the early 1940s, 'before' and 'after' photographs depicted dramatic changes in Napier's appearance. For a time, local boosters called it the world's most modern city (McGregor 1989 p67). However, most transformations can be attributed to a worldwide shift in architectural fashions, and to the appearance of whole new residential or industrial suburbs on reclaimed land near the outskirts of the city.

The eternal city versus the ideal city

San Francisco and Napier illustrate the contradictory human impulses which accompany recovery from natural disasters. On the one hand, city dwellers look to their built environments for signs of stability. This need is heightened in the aftermath of a catastrophe, when survivors demand a quick return to normality. By and large, cities answer this need. Visitors to Napier and San Francisco marvelled at how quickly these cities resumed day-to-day functions, albeit in makeshift accommodation. Their capacity to survive destruction resulted from great size, massive infrastructure and

a high degree of redundancy and autonomy among their parts. However, the persistence of urban forms also expresses the human quest for continuity. For this reason, images of destroyed or abandoned cities are shocking. They create the prospect that, individually and collectively, we will one day vanish without trace. So a ruined city presents a compelling invitation to rebuild on the foundations of the old. This urge to replicate what has been lost is prompted partly by economic imperatives, but it also reflects people's desire for tangible links with their past and their future.

However, there is a second image deeply embedded in most urban cultures. Confronting the eternal city is the ideal city, the future city: utopian, visionary and critical. When the histories of cities on fault lines are written, the awful prospect of destruction is tempered by the promise of renewal. This prospect is always seductive because there are many urban form models to choose from. Cities have been devised as cosmological diagrams, machines, organisms and even texts. More recently the city has been viewed as an information system or even a giant theme park. None of these conventions are static. Ideas mutate and sometimes become their opposites. For example, over a thousand years, the place of nature in the city has been reversed from a chaotic, menacing 'outside' to a benign refuge for natural order. Another fluctuating image is the machine. Once it represented dynamism, modernity and material welfare. Now, it has become a symbol of alienation and control. These transformations remind us that the city is constantly being reinterpreted. A calamity is an opportunity to start over again by reinventing the city in accordance with the latest prescription for well-being or the most persuasive explanation of contemporary urban culture.

There are two more reasons why Burnham's plan for San Francisco stood little chance of being implemented. Even if the will to create a better city exists, a natural

disaster reveals that urban form is remarkably resistant to change. Regardless of the extent of the damage, attempts to reinvent cities following catastrophes are likely to be frustrated. This is because two of the most significant determinants of urban form, topography and property lines, survive natural disasters intact. As San Francisco and Napier illustrate, terrain predetermines much of the character of earthquake-prone cities. In Napier, the 1931 quake triggered landslides, raised beaches and helped to drain swamps. In some localities these changes were pronounced.

Yet, on a macro scale, the city's natural setting changed little. Napier's subdivision pattern proved equally robust. In the central city, changes to rights-of-way and private lots were superficial. Indeed, the destruction of Lands and Survey Department records and the displacement of boundary markers meant that owners had every incentive to rebuild on existing sites so as to avoid protracted surveys and negotiations (Conly 1980 pp188–189). Property lines and public rights-of-way endured because they had an abstract existence as well as a physical one. While many constructed boundaries collapsed and paper records burned, the legal titles to land persisted and were painstakingly recreated following the earthquake.

Planning for the 'Big One'— earthquakes and urban design in Wellington

The remainder of this paper focuses on informed speculation rather than historical fact. Using Wellington as an example, it investigates whether a major earthquake could help a city to realise its urban design aspirations. Wellington has not suffered the kind of devastation experienced by San Francisco or Napier, but it faces a well-recognised seismic risk. When the Big One comes, is it likely to clear the way for a radical redesign of the central city?

Before one can answer this question, it is necessary to consider how the current generation of Wellingtonians would like their city to look in 20, 30 or even 50 years. Given the lessons of San Francisco and Napier, it would be pointless to suggest replacing existing street patterns with a whole new network of monuments and public spaces. History indicates that the plans most likely to be implemented during the recovery period are those formulated long before disaster strikes. Wellington has a number of major urban design projects in the pipeline. If the city council's initiatives are combined with the author's wishful thinking, it is possible to predict substantial changes to the area within the Town Belt:

- The existing Lambton Harbour redevelopment is joined by two new urban villages on redundant port and rail land.
- The notorious motorway extension is superseded by a 'triple bypass' which disperses east-west traffic through the previously impervious Te Aro street grid.

- On Cable Street, the New World supermarket yields its site to a larger Waitangi Park which preserves an uninterrupted view shaft down the landscaped axis of Kent and Cambridge Terraces.
- Te Papa (National Museum of New Zealand) is embedded within a matrix of pedestrian-scaled city blocks, while canals convert the Herd Street Post Office and the Overseas Passenger Terminal sites into a small island.
- The imposing but unloved New Zealand Post headquarters disappears to allow a broad swath of open space between Parliament and Glasgow Wharf.
- A new city park appears mid-way along Cuba Street, and apartment developments repair the eroded southern and western edges of the Te Aro grid.

Would any of these projects be accelerated by some vigorous shaking along the city's main fault? Clearly, none of the plans are predicated on a 'doomsday scenario' in which large tracts of the city are razed and made available for urban renewal. Whether or not an earthquake provides a useful catalyst for realising these improvements depends partly on the location of damage. According to the Wellington Regional Council's 1996 *Combined Earthquake Hazard Map*, central city buildings and infrastructure are most at risk in areas of soft natural sediments and poorly compacted reclamations. These zones account for most of the land between the city's natural shoreline and the present waterfront. They also include an ancient waterway which skirts the western slope of Mt Victoria. Given the council's present focus on waterfront developments, there is an intriguing degree of congruence between probable extent of destruction and the sites of major urban design initiatives.

Around the edge of Lambton Harbour, the magnitude of the damage may cause the present waterfront redevelopment plan to become obsolete. Since it has taken 20 years to reach a consensus on the current design, such radical change may hamper the development rather than hasten it. Nevertheless, an earthquake might introduce some attractive new opportunities. Finger wharves and old warehouses may be lost, but the threshold between city and sea could become more indented and more varied. Waterloo, Jervois and Customhouse Quays will almost certainly be destroyed. However, they would soon be rebuilt either as wide tree-lined boulevards or as a new esplanade, depending on prevailing attitudes to pedestrians and traffic. The Post Office headquarters sits on shaky ground, and may be damaged beyond repair. Its demolition would permit Parliament grounds to be extended to a new boat harbour and an artificial beach where wakas (canoes) could land on ceremonial occasions.

Further north, between Thorndon and Kaiwharawhara, the implications of earthquake damage are even more profound. Here, a disaster could trigger positive changes to the city's transport infrastructure. If the container

terminal is severely damaged, port operations may move to Seaview or to other more competitive North Island locations. This would release what remains of the Thorndon reclamation for a new inner-city district which rivals Te Aro in terms of size and proximity to the CBD. However, the most unstable areas of reclaimed land would likely be transformed into parks and wetlands.

Wellington's rail system would also be rationalised. With no shipping to serve, freight lines could disappear, creating room for light rail and high-density housing. Damaged culverts, water mains and other underground services would be rebuilt at great expense. But this repair work could tip cost-benefit equations in favour of a Britomart-style tunnel bringing passenger trains to the northern end of Lambton Quay. Thorndon Quay could become a prime retail address. If offices and apartments replace the present rail sidings, this gracefully curving street could be perceived as a natural extension to the so-called Golden Mile. Along its eastern frontage, a grid of new streets could provide frequent connections with the harbour, causing Thorndon to become a waterfront suburb once again.

In other parts of the city, the areas of greatest risk do not coincide so closely with the locations of planned civic improvements. Te Aro appears to offer least opportunity in this regard. This district has one of Wellington's highest concentrations of unreinforced masonry buildings. But better subsoil conditions mean reduced hazards for modern or lightweight construction. A tongue of loose sediment between Courtenay Place and College Street might produce a large enough pocket of damage to allow an eastward extension of Ghuznee Street. Another hazard area could become the nucleus for much needed redevelopment around the ragged intersection of Victoria Street and the proposed bypass. Sadly, there are fewer prospects for rebuilding elsewhere along the erratic edges of these two arterial roads. In the centre of Te Aro, no single location presents itself as the obvious site for a new neighbourhood park. But some of Wellington's ancient streambeds might reappear: first as trails of destruction, then as a series of canals or leafy linear reserves.

Conclusion

The process of urban development is most often an empirical one. Expedient, fragmentary and incremental: city form frequently responds to circumstance rather than a perfect idea or a predetermined plan. Natural disasters seem to offer a different kind of growth. They promise to deliver an urban tabula rasa: effectively a new civic foundation without context or compromise; a blank slate on which a contemporary vision of the ideal city can be mapped out. Yet the real possibilities for recovery are more limited. While it is rare for a ruined city to be restored exactly to its former state, it is equally unusual for natural disasters to generate

grand new urban designs. In the absence of a despotic ruler or a totalitarian government, a city survives catastrophe by building a likeness of its previous form. Ambitious plans may be realised more quickly as the result of an earthquake, but only if the projects have wide public acceptance before disaster strikes. Even then, the fate of these improvements will depend on the distribution of damage. In Wellington, major design initiatives coincide with the areas of greatest seismic risk. However, this in itself provides no guarantee of implementation. Like all city development, the recovery process is shaped by many competing factors, and the outcome is difficult to predict on an urban or architectural scale.

References

- Baker, M., (1973), The Little-Known Plan that Burnham Proposed, *American Institute of Architects Journal*, Vol. 59, No. 4, pp 48–51
- Conly, G., 1980, *The Shock of '31, the Hawke's Bay Earthquake*, Reed, Wellington
- Hines, T. S., (1974), *Burnham of Chicago, Architect and Planner*, Oxford University Press, New York
- McGregor, R., (1989), *The Great Quake*, Regional Publications Limited, Napier
- Moore, C., (1921), *Daniel H Burnham, Architect, and Planner of Cities*, Vol. 2, Houghton Mifflin, New York
- Scheffauer, H., (1906), The City Beautiful – San Francisco Rebuilt – II, *Architectural Review*, Vol. 20, No. 117, pp 86–94
- Staats, H. P., (Ed.) (1990), *Californian Architecture in Santa Barbara*, Architectural Book Publishing Company, Stamford, Connecticut
- Wellington Regional Council, (1996), *Combined Earthquake Hazard Map Sheet 1*, WRC, Wellington
- Wright, M., (2001), *Quake, Hawke's Bay 1931*, Reed, Auckland

Author

Christopher McDonald is a qualified Urban Designer with masters degrees in Architecture and City Planning from the University of California, Berkeley. He is Associate Dean at Victoria University's Faculty of Architecture and Design where he teaches courses in the history, theory and practice of Urban Design. In 2002, he returned from a two-year secondment to the City of Melbourne, where he worked as a Senior Urban Designer and co-authored Melbourne's Draft Urban Design Framework. Through Victoria University's Centre for Continuing Education Chris provides urban design training for local government planners and other mid-career professionals. As a consultant, he has experience in a wide range of urban planning and development projects. These include Wellington's City Gateway concept plan, Central Area Design Guide and Streetscape Strategy as well as residential design guidelines for both Wellington and Palmerston North. In 1991, Chris helped to produce award-winning urban and architectural guidelines for a 10 hectare biotechnology plant in West Berkeley, California. In 1996, he was a member of the multi-disciplinary design team that produced concept plans for public open spaces on Wellington's waterfront. He is currently a member of the Technical Advisory Group that advises Wellington City Council on waterfront development issues. Chris' research interests include street layouts and colonial town planning in Australasia. His most recent publications focus on the nineteenth-century character of cities in the so-called "Wakefield Settlements" of South Australia and New Zealand.