Compliance and Enforcement Assessment Report

Fiji National Building Code Update

FINAL DRAFT

January 31, 2024

ACKNOWLEDGMENTS

"Alone we can do so little, together we can do so much"

This document is a true collaboration of ideas, suggestions, observations and sound advice from a wide spectrum of individuals from government departments, agencies, organizations and the private sector, all with a keen interest in creating a healthy and sustainable future.

The consulting team would like to thank the dedication and commitment from all individuals associated with the groups below. In particular, we appreciate the knowledge, guidance and countless hours from the lead agency representatives listed here:

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Fiji Building Designers Association
Fiji Bureau of Statistics
Fiji Master Builders Association
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Insurance Council of Fiji
International Finance Corporation
National Council for Persons with a Disability
Pacific Regional Infrastructure Facility

Local Authorities

Labasa
Lautoka
Levuka
Nadi
Nausori
Sigatoka
Suva

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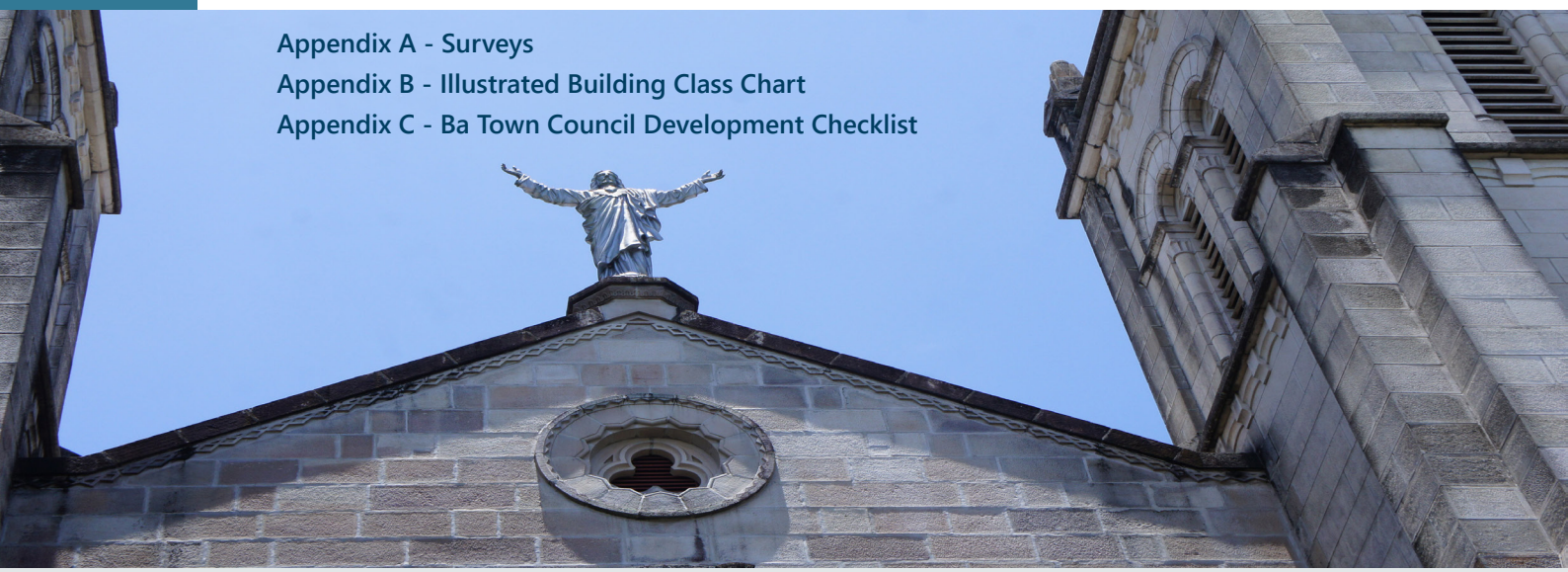

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ACRONYMS

AA	Approval Agency
BC	Building Committee
BPEC	Building Permit Evaluation Committee
CIC	Construction Industry Council
DBGA	Department of Building and Government Architects
DTCP	Department Town and Country Planning
EF	Engineers Fiji
FAA	Fiji Association of Architects
FBDA	Fiji Building Designers Association
FNBC	Fiji National Building Code
FGCH	Fiji Green Construction Manual for Homes
FHA	Fiji Housing Authority
FMBA	Fiji Master Builders Association
FMS	Fiji Meteorological Services
FNU	Fiji National University
FRA	Fiji Roads Authority
JTG	Joint Task Group
LA	Local Authority
LIA	Legal and Institutional Arrangements Report
MOF	Ministry of Finance
MHMS	Ministry of Health and Medical Services
MOH	Ministry of Housing
MIA	Ministry of iTaukei Affairs
MLG	Ministry of Local Government
MPWT	Ministry of Public Works, Meteorological Services, and Transport
MRMD	Ministry of Rural and Maritime Development & Disaster Management
MTCS	Ministry of Trade, Cooperatives, Small and Medium Enterprises
NDMO	National Disaster Management Office
NTMS	National Trade Measurement and Standards
USP	University of the South Pacific
WAF	Water Authority of Fiji

1.0 INTRODUCTION

BACKGROUND

The update to the Fiji National Building Code (FNBC) and creation of a new Fiji Green Construction Manual for Homes (FGCH) officially began in May, 2022, and will be completed by January 31, 2024. The purpose of the project is to update building standards and develop a strategy for effective implementation. The Project is officially known as Asian Development Bank TA-9347 REG: Pacific Urban Development Investment Planning and Capacity Development Facility-Fiji National Building Code.

The overall project includes the following deliverables:

1. **Update to the Fiji National Building Code**
2. **Fiji Green Construction Manual for Homes**
3. **Legal and Institutional Arrangements Report**
4. **Compliance and Enforcement Report**
5. **Terms of Reference for 5-Year Capacity Building and Training**
6. **Communications (Media Strategy, Awareness and Promotion Strategy, Website Launch)**
7. **Parliamentary Submission Report**

The following Compliance and Enforcement Report will fulfil Deliverable No. 4 in the above list, and serves as a reference for the development of Deliverable No. 5.

Scope

One of the principal challenges with the current development process in Fiji is that the Building Code is not readily complied with or enforced. This has resulted in buildings that are constructed below health, safety and sustainability standards, and are certified for occupancy without proper due diligence. While not every building is below standards, a significant number are constructed that are not resilient to cyclones, tropical storms, or excessive heat, and do not meet standards for fire-resistance, wiring, and firefighting operations. Other buildings may not have proper health and sanitation, environmental quality, protection for hazardous substances, or can safely accommodate people with disabilities. The purpose of the Compliance and Enforcement Report is to create a strategy to address these issues with respect to compliance and enforcement, and reinforce the ability of the Government of Fiji to enforce important health, safety and sustainability standards in the Building Code.

A number of factors were identified and are within the Terms of Reference that contribute to the current situation of inadequate compliance and enforcement, including a lack of awareness of the Building Code and related standards, lack of trained professionals to use and reference Building Code standards, a lack of knowledge, training and competency of plan examiners and building inspectors, and an inconsistent administrative structure in all levels of government. The Compliance and Enforcement report analyses these enforcement issues in detail and provides a strategy to strengthen capacity.

Related Strategy Documents

The Compliance and Enforcement report addresses the above issues, with the exception of one key consideration - strengthening the legal and institutional framework. Developing a strategy to have appropriate legislation for compliance and enforcement of the FNBC is detailed in:

- Deliverable No. 3 - **Legal and Institutional Arrangements Report**
- Deliverable No. 7 - **Parliamentary Submission Report**

These documents outline a strategy for the creation of a New Building Act and Building Regulations, and a new Building Committee to address disputes, appeals, updates to the FNBC and FGCH, and approve budgets. Strategies for the allocation of administrative responsibilities including roles and responsibilities of government ministries, departments, local (municipal) councils, and agencies with respect to the building permit approval process are also presented.

Objectives

Objectives for the Compliance and Enforcement Report are to:

- Strengthen the Government of Fiji's ability to properly assess building permit applications and conduct building inspections
- Strengthen education and training opportunities for building professionals in the public and private sectors on building stability, safety, access and green building techniques
- Increase the knowledge base of building professionals and the general public on the standards in the FNBC and how they are applied
- Increase available resources that will assist in the interpretation of the FNBC
- Develop procedures for regulation of qualified builders and professionals
- Develop procedures to regulate quality of building materials, fire safety equipment, and green building products
- Strengthen Fiji's commitment to a zero carbon future as indicated in the Climate Change Act, 2021 and National Development Plan

TERMS OF REFERENCE

The assigned tasks for the Compliance and Enforcement report are contained in the Terms of Reference for the project as shown below.

All of these tasks, and more, are contained in this report.

EXCERPT FROM THE TERMS OF REFERENCE FOR THE FNBC UPDATE PROJECT:

a) In consultation with the JTG prepare an Inception Report which confirms/redefines the compliance enforcement procedures scope of work, methodology, work plan and risk matrix.

b) Determine the impacts of proposed changes on costs – both the capital and lifecycle costs, including avoided costs – prior to the workshops in the administrative divisions.

c) Undertake a gap analysis of the current building control regulatory human resource environment to identify shortfalls in regulatory resources and skills at:

- MOIMS;
- administrative divisions (4 no.);
- municipal councils (13 no.) and
- provincial councils (14 no.).

d) Consult with the

- MOIMS;
- Ministry of Local Government, and
- Ministry of Rural and Maritime Development and Disaster Management

• to recommend a strategy for improving FNBC compliance enforcement at municipal (13 no.) and provincial (14 no.) levels.

e) Incorporate recommendations into a draft FNBC Compliance Enforcement Assessment Report and share with the JTG for comment and endorsement.

f) Finalize the Report based on feedback.

g) Prepare a Terms of Reference for a 5-year Program of Capacity Building

Methodology

To assess the existing building permit approval process and develop an implementation strategy for compliance and enforcement, primary tasks included research, stakeholder consultation and analysis. Steps taken included the following:

- Background document review of the Terms of Reference, legislation, policies and technical document issued by the Government of Fiji and international agencies, including the following:

Acts and Regulations:

- Climate Change Act 2021
- Land Development Act 1961
- Land Use Act 2010
- Public Health Act 1935
- Public Heath Regulations 2004 (Building Code)
- Regulation of Building Permits Act 2017
- Regulation of Building Permits Regulations 2020
- Town Planning Act 1978

Technical Documents:

- Fiji National Building Code
- Fiji Home Building Manual
- Local Authority building permit forms and procedures, including those located in other ministries such as the Department of Town and Country Planning and agencies like EFL
- Local and international news articles on building compliance issues in Fiji
- Review of Building and Construction Quarterly Reports from the Fiji Bureau of Statistics

- Insight into the gaps and challenges in enforcing the FNBC was gained through formal and informal stakeholder consultation, including meetings and interviews with Fiji based professionals who form part of the Joint Task Group for the update to the FNBC.
- An online questionnaire was emailed to staff members at Local Authorities (including building permit reviewers, inspectors, and town planners) to gain insight into the challenges and opportunities in the building permit approval process. From this raw data, the Consulting Team was able to develop an understanding of the gaps in the existing process and implementation tools that could potentially improve compliance and enforcement.
- One-on-one interviews with key organizations and individuals in the building industry were conducted to identify and discuss compliance and enforcement issues
- A strategy was then prepared for 10 key implementation strategies spanning the entire building process, from submission of building permit applications to the issuance of Certificates of Occupancy.
- Two draft documents were reviewed by the JTG and PRIF
- A final report was then prepared that summarises gaps and recommended implementation strategies. This report serves as a reference for Deliverable No. 5 - Terms of Reference for 5-year Capacity Building and Training.

2.0 SITUATION ANALYSIS

BUILDING PERMIT ISSUANCE TRENDS

To understand the existing state of the building industry in Fiji, an analysis of building permit statistics was conducted. Data was obtained from the Fiji Bureau of Statistics and analysed by the Consulting Team and Ministry of Rural and Maritime Development and Disaster Management (MRMD).

According to the latest issue of Building Statistics from the Fiji Bureau of Statistics for 3rd Quarter 2022, the number of building permits and completion certificates issued across Fiji has been in a decline since 1998 as shown in Figures 2.1 and 2.2. However, the population growth since 1998 has increased at an average rate of 12%.

Clearly, the number of buildings is increasing based on population growth but the number of building permits is not following this trend. One can conclude there is a lack of capacity or willingness to enforce the FNBC requirement that all buildings in Fiji must be in compliance with the FNBC.

The impact of Covid 19 on the construction industry is also evident in Figure 2.2 and 2.3. It has had a

Figure 2.1 Building Permits for Private Dwellings Issued 1998 – 2021

Source: Keith Hornby, MRMD

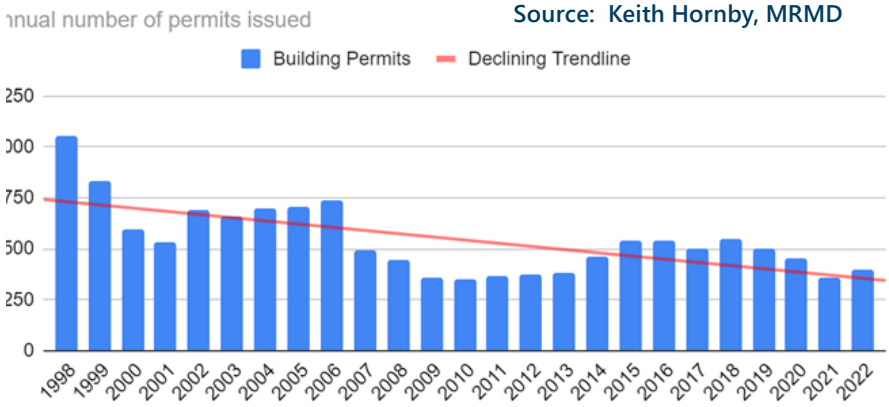
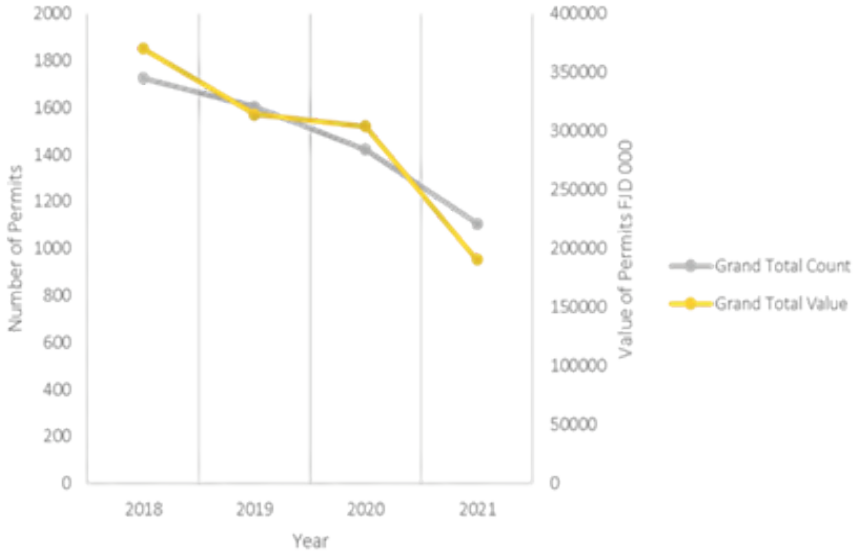


Figure 2.2 Total Building Permit Values 2018 – 2021



POPULATION GROWTH

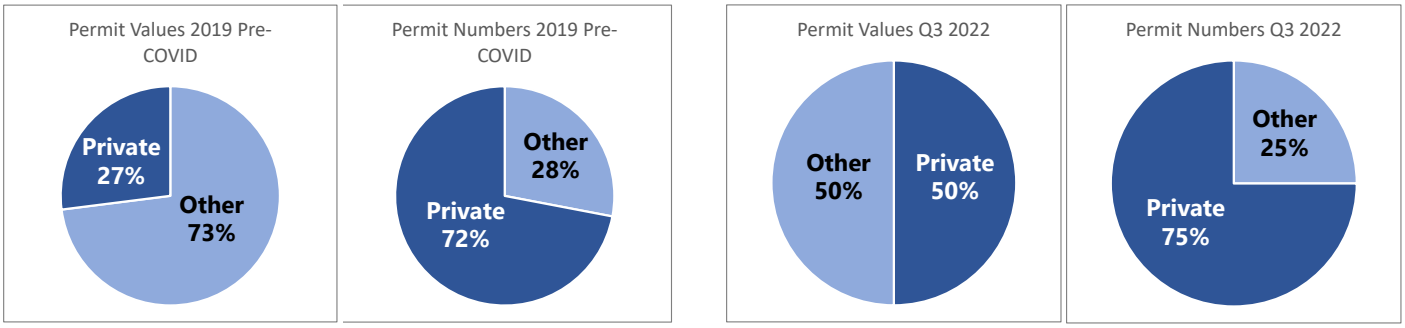
1998: 823,422 population

2023: 936,375 population (12% growth rate)

2048: 1,086,848 population (14% growth rate)

Data source: United Nations

Figure 2.3 Building Permits Private Sector and Others 2018 – 2021



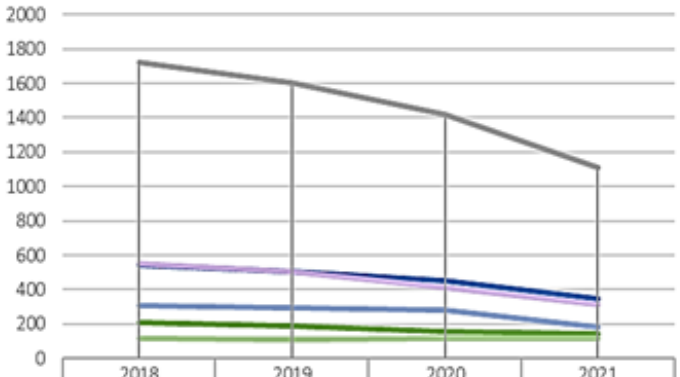
distinguishable negative impact on the commercial building sector as indicated by the reduced share of building permit numbers and values since 2018. The value of other building permits in particular has decreased from nearly 75% share of total value compared to a 50% share in Q3 2022. While the number of permits remains the same from 2019 to Q3 2022, the reduction in value indicates that Covid has impacted the amount invested in non residential projects.

However, pre-covid numbers show a high building value of 73% for non-residential yet lower numbers of building permits at 28%. This indicates that Covid has impacted the amount invested in "Other" building permits yet the number of permits has remained roughly the same.

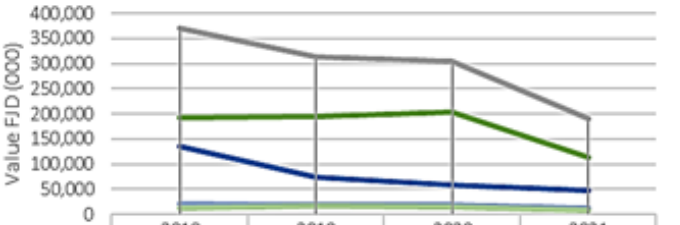
Based on the data collected, the vast majority (number) of building permits lodged are residential (72% in 2019 pre Covid) whilst the larger value (in dollar terms) can be attributed to commercial and other non-residential projects (73% in 2019 pre-Covid).

This disparity is very important when assessing the human resource capacity and the level and distribution of skills to assess and inspect building permits. For example, non residential projects, which are less in number but have a higher value, are more likely to need specialised technical knowledge to assess the scale and complexity of design and require qualified staff for a thorough assessment. However, very few persons in Local Authorities who review building permit application have professional certification or certified training according to information collected in stakeholder review meetings and a survey of local authority staff. Clearly, there is a gap in skilled plan reviewers and building inspectors who can provide technical advice and assist with deriving solutions to comply with the Building Code.

Figure 2.4 Building Permits Issued 2018 - 2021



	2018	2019	2020	2021
Private new build no.	546	503	454	350
Private additions no.	305	294	283	185
Other new build no.	212	190	156	143
Other addtions no.	114	113	117	114
Grand Total misc	548	502	411	315
Grand Total Count	1,725	1,602	1,421	1,107

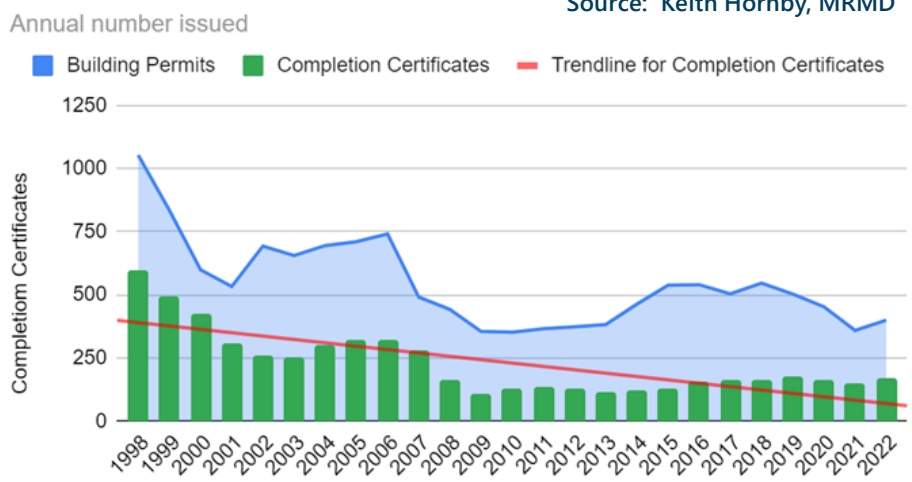


	2018	2019	2020	2021
Private new build value	134,651	73,141	58,692	48,632
Private additions value	21,591	19,906	18,696	13,334
Other new build value	191,707	195,029	204,156	113,755
Other addtions value	11,497	16,339	14,132	8,925
Grand Total Value	370,047	314,072	303,804	190,629

Value of Permtis Lodge FJD (000)

Figure 2.5 Building Permits and Completion Certificates for Private Dwellings Issued 1998 - 2023

Source: Keith Hornby, MRMD



A comparison of the number of building permit and completion certificates issued for private dwellings, as shown in Figure 2.5, indicates the number of Completion Certificates is much lower than the number of building permits issued. Other than landowners who want to have the building insured, there is likely little incentive to complete the final inspections for the Certificate of Completion, particularly if cost-cutting building practices resulting in non-compliance with the FNBC were used. The lack of enforcement in ensuring Completion Certificates are attained prior to building occupancy is clearly evident.

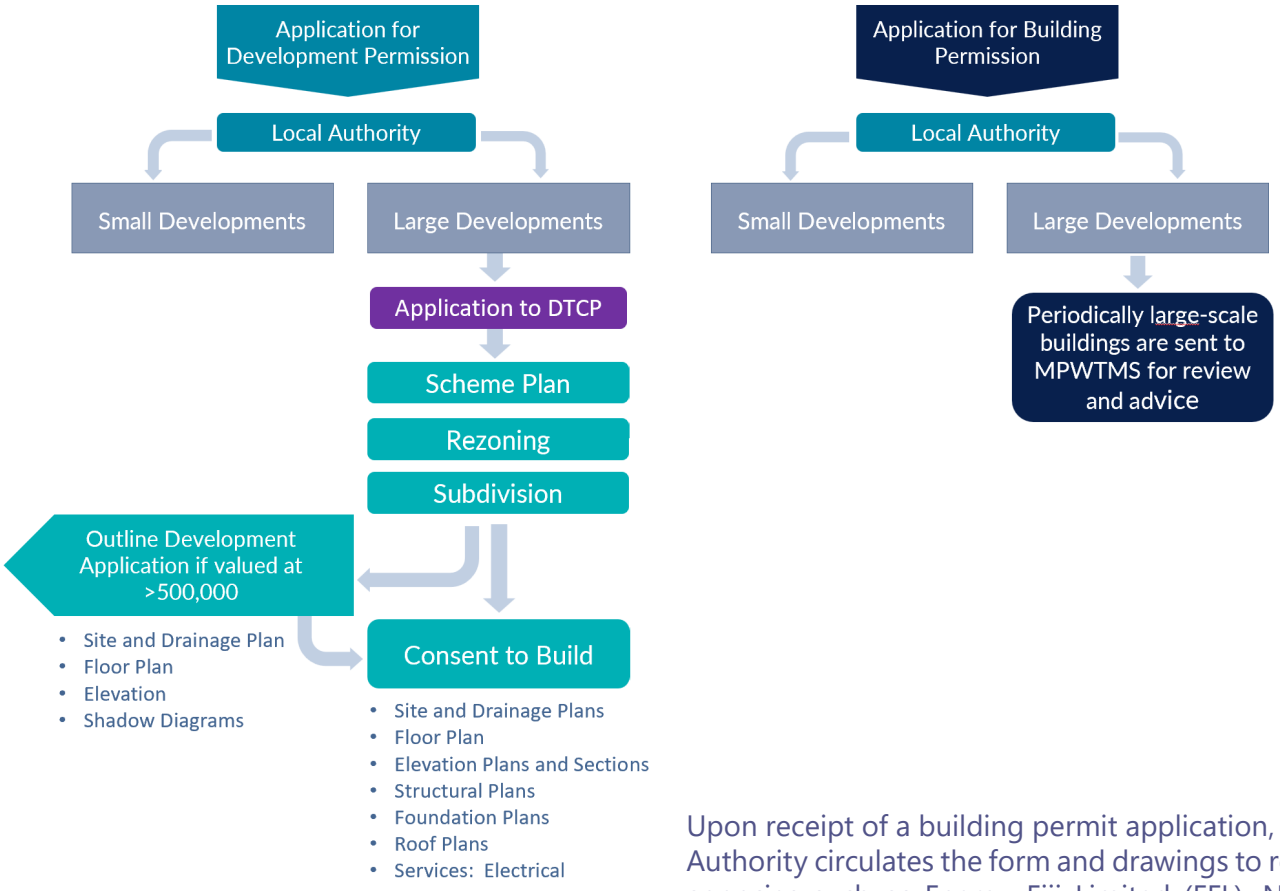
CURRENT BUILDING PERMIT APPROVAL PROCESS

The E permit and building inspection approval processes have been in their current format since 2017-2018 when the Government of Fiji elected to transfer the administration of the FNBC from the Ministry of Health and Medical Services (MHMS) to the Ministry of Public Works (MPWT). Previously, the Ministry of Health performed both of these tasks since the FNBC has been a regulation of the Public Health Act since 1994.

Development Permission

Prior to applying for a Building Permit, the applicant must receive Development Permission. In urban areas there must be an approved scheme plan, rezoning and subdivision plan, and the approval of these items forms the basis for Development Permission. Small developments that are compliant are approved by the Local Authority, while larger, complex developments are reviewed by the Department of Town and Country Planning (DTCP) who provide the Local Authority with recommendations for approval, denial, or approval subject to conditions. Most applicants are required to submit an Outline Development Application which includes preliminary site and building drawings (plan, elevations, floor plan, shadow diagrams, and the like).

Figure 2.6 Development and Building Permit Approval Processes

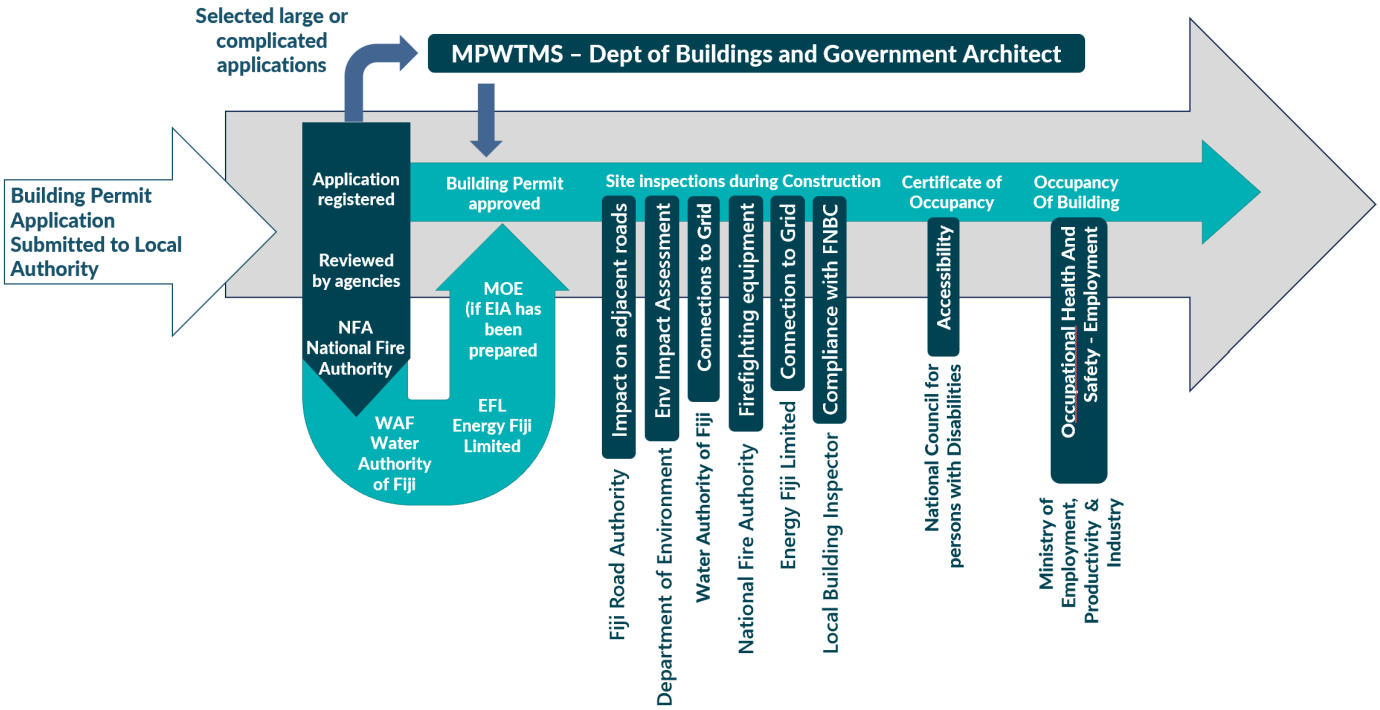


Building Permission

Since 2018, building permits are submitted, processed and issued by the Local Authorities within the four divisions of Fiji as well as Rotuma, as illustrated in Figure 2.6 and 2.7. Similarly, building inspections during construction and issuance of Certificates of Completion are administered by Local Authorities. For large and complicated buildings, a Local Authority may choose to request MPWT technical staff to review the building permit application and perform site inspections, however, this is a rare occurrence.

Upon receipt of a building permit application, a Local Authority circulates the form and drawings to relevant agencies such as Energy Fiji Limited (EFL), National Fire Authority (NFA) and the Water Authority of Fiji (WAF) for review. If they choose to request MPWT provide technical assistance, the Local Authority will circulate the building permit to the Department of Buildings and Government Architect. Some of the smaller councils, particularly in the outer islands, periodically request Suva or Lautoka Local Authorities for assistance in reviewing large-scale buildings. Upon receiving comments from the agencies, the Local Authority will make a decision on whether the application complies with the FNBC or if revisions are required.

Figure 2.7 Building Permit Review, Building Inspections and Certificate of Completion



If it complies, the Local Authority issues the building permit. If it doesn't comply, the Local Authority informs the applicant of changes needed for compliance. If drawings are satisfactorily amended, the Local Authority issues a building permit.

If the building permit application is submitted to MPWT for technical assistance, MPWT will review the application, contact agencies such as NFA, EFL and WAF if necessary, and communicate with the applicant to resolve issues. Once the drawings are deemed by MPWT to comply with the FNBC, MPWT informs the Local Authority that the drawings are acceptable and the Local Authority issues the building permit.

Application forms

The 14 Local Authorities and Rotuma each have their own building permit application forms meaning that there is no consistency across the country. It is not clear whether Local Authorities require the same type of drawings or specifications to be submitted for review based on a comparison of the applications. Neither is it clear if the same level of detail is provided in drawings, specifications or other supporting documents.

Energy Fiji Limited likewise has their own electrical permit application forms and process for approving connections for residential buildings, commercial, and buildings which are not under a formalized lease with either ITaukei or crown land. Under the Electricity Regulations 2019 (Part 7 – Consumers' Installations), designers of electrical systems are required to provide EFL with design and verification certification which must be certified by an EFL licensed electrical contractor.

The Water Authority of Fiji has a similar process to EFL in that they have their own application forms, but they have an online system that anyone with internet access can use to submit an online application.

Fiji Roads Authority also has their own application forms and process for new subdivisions, road naming and other activities that affect the operation of the road network. FRA encourages developers to undertake a pre-consultation meeting prior to submitting a Building Permit and Development Consent to discuss issues regarding the road network to expedite processing times.

The National Fire Authority does not have a permit application process to review building permit applications plans prior to approval and instead will provide comments to Local Authorities when circulated building plans to review. NFA does have application forms to request a Structural Fire Safety Inspection to ensure that fire safety equipment is properly installed.

Fast-track building permit approval

To enable an expedited approval system, the Government of Fiji created a fast-track system through the passing of the Regulation of Building Permits Act, 2017, and the Regulation of Building Permits Regulations, 2020.

Applicants for buildings other than residential can pay a fee and submit a building permit application directly to the Building Permit Evaluation Committee for consideration. The BPEC consists of government stakeholders and building permit professionals who are empowered to review and approve a building permit, but it must be completed within a set timeframe as noted in the Regulations.

When reviewing a building permit application, the BPEC must complete the following tasks within the allotted timeframe:

(a) Coordinate with approval agencies to ensure the relevant approvals are granted – 40 working days

(b) Coordinate with an independent person to ensure an assessment is carried out where an approval agency has failed to respond – 14 working days

(c) Coordinate with the Local Authority to issue a building permit – 40 working days

(d) Direct approval agencies to consider and identify the necessary approvals required – 5 working days

(e) Direct a Local Authority to issue a building permit – 7 working days

Although the system is in place, it has yet to be used by the building industry, likely because the application fee is currently set at $20,000 FJD, which is cost-prohibitive compared to the cost of a Building Permit application fee ($3,339 FJD).

Building inspections

Since 2018, building inspections during construction are carried out by building inspectors from the Local Authorities.

Similar to building permit application forms, there appears to be a lack of a standardized inspection methodology for residential and commercial buildings across the country.

The building inspection process in Lautoka , for example, includes a full array of inspections as illustrated in Table 2.1. However, many other Local Authorities do not have the full range of inspections based on analysis of the building permit process described online and assessing the information required to be submitted on the application forms.

The variability between districts, cities, villages, rural areas and iTaukei land means that the quality and completeness of site inspections are not uniform throughout the country, and data cannot be readily centralised and compared.

Table 2.1 Typical Building Inspection Stages

Existing Building Inspections for Lautoka
Substructure – Foundation/footing inspection
Floor
Wall framing
Columns
Suspended floor slab
Roof beam
Roof structure
Drainage
Building services
Completion

Certificate of completion

In general, a Certificate of Compliance and a Certificate of Completion have the same meaning ... that the works described in the building permit application have been completed, inspected, and are deemed to comply with the FNBC. The Local Authority must issue the Certificate prior to occupancy of the building or site. At present, a system of partial occupancy does not exist whereby a portion of a large construction project has been completed and meets final inspection, and is deemed safe for occupancy while other portions of the project are still under construction, a common practice in other countries such as Canada.

New supporting policies

The update to the FNBC will result in many new standards that were not previously envisioned when the Building Code was created more than 30 years ago. For many of the new standards, particularly in relation to climate resilience, new supporting policies and procedures will be needed to ensure effective implementation, compliance and enforcement. Table 2.2 below provides a summary of the anticipated documentation and procedures that will be needed to implement the proposed new standards in the FNBC.

Table 2.2 Policy or Procedure to Implement Specific Standards in the FNBC

Proposed FNBC Standard	Policy or Procedure for Implementation
Section B Structure	
B1.3 P1 D1 Siting – siting buildings above known flood levels, storm surge	Required - Flood level /coastline mapping or procedures describing method of calculation
B1.3 P3 Connections and Fastenings	Suggested – pictorial of acceptable cyclone-resistant fastenings, updated annually
B2 Demolition	Required – detailed procedures for demolition and inspections
B3 Building Materials	Suggested – information bulletins on most common and green building materials describing structural requirements
Section C Fire Protection	
C1 Fire Resistance	Suggested – List of fire-resistant material per construction type
Section G Energy Efficiency	
G1 Performance	Suggested - Green rating system or checklist

Standards division

The Ministry responsible for the enactment of new standards in Fiji is the MTCS National Trade Measurements and Standards. The Standards Division administers the development of local standards and the adoption of overseas standards for use in all aspects of the Fijian economy, including building materials, products and equipment. To ensure standards are properly referenced and implemented consistently across the country, the Standards Division ensures that new standards are not in conflict with local laws or policies. In this regard, the FNBC update will be reviewed by the Standards Division who must provide their approval before the FNBC can be approved for use by the Government of Fiji.

Each of the supporting studies listed above should be completed as soon as possible after the enactment of the FNBC update to ensure seamless implementation.

3.0 SURVEYS

APPROACH

At the outset of the project, stakeholder feedback was gathered and analysed to gain insight into overarching concerns regarding building code compliance and enforcement. One method used was to design and administer a survey for plan reviewers, town planners and building inspectors to obtain information on the assessment of building permit applications, building inspections, and enforcement of the Building Code. In addition, the surveys were designed to gain an overall understanding of the scope and makeup of the building regulation workforce, see Appendix A.

Table 3.1 Polling Results for Surveys Regarding Assessment of Plans, Inspection and Enforcement

	Building Permit Approvers	Building Inspectors	Town Planners
Number received	**8**	**6**	**3**

Each survey was created in MS Forms and distributed via email through the Ministry of Housing and Local Government, who then forwarded the surveys to Local Authorities throughout Fiji. Each survey asked the respondent to identify areas of concerns with regard to receiving and processing building permit applications, and in performing site inspections and issuing occupancy permits.

Initial polling results indicated that construction of housing was of the greatest concern along with the structural stability of buildings and compliance with the building code. The majority of responders also supported the idea of all buildings coming under the jurisdiction of the building code regardless of location, size or purpose.

The buildings of least concern were identified to be apartments and accessory buildings.

TOP 3 ISSUES OF GREATEST CONCERN

1. Housing construction safety and affordability
2. Structural stability of buildings
3. Many buildings do not comply with the Building Code

Other topics identified to be important included:

- Non-compliant single detached dwellings, hospitals and public buildings
- Buildings that are structurally sound, compliant, and have extreme weather protection.
- Code standards should apply to all buildings
- The inclusion of climate resilient and green building practices
- Instructions on how to use the FNBC and FGCH and additional explanatory content

KEY SURVEY RESPONSES

Building Permit Plan Processing Questionnaire - Municipal Councils

"All buildings under construction to be inspected by the building inspector"

"Digitalization process for building permits"

"Registration of Qualified Person for preparation and submission of plans for consent / approval"

"Data shearing between stakeholders for correct information and informed decision applied on applications"

Town Planners Questionnaire

"If the approval processing can be done online with relevant authorities"

"That consultants be regulated by some form of qualified professional system administered by government as currently there are a lot delays due to consultants submitting substandard applications or not complying with relevant legislations & regulations affecting the subject site from Town Planning Act, Environment Management Act, Subdivision of Lands Act, etc."

"Updated checklist to be implemented in terms of all relevant documents needed prior to lodgements of Building applications"

Building Inspectors Questionnaire

"For Rakiraki there are not much major developments in the Rural boundaries but residential buildings for home security. However for rural inspections the applicants should provide the transportation since there is not much fees gained by the council"

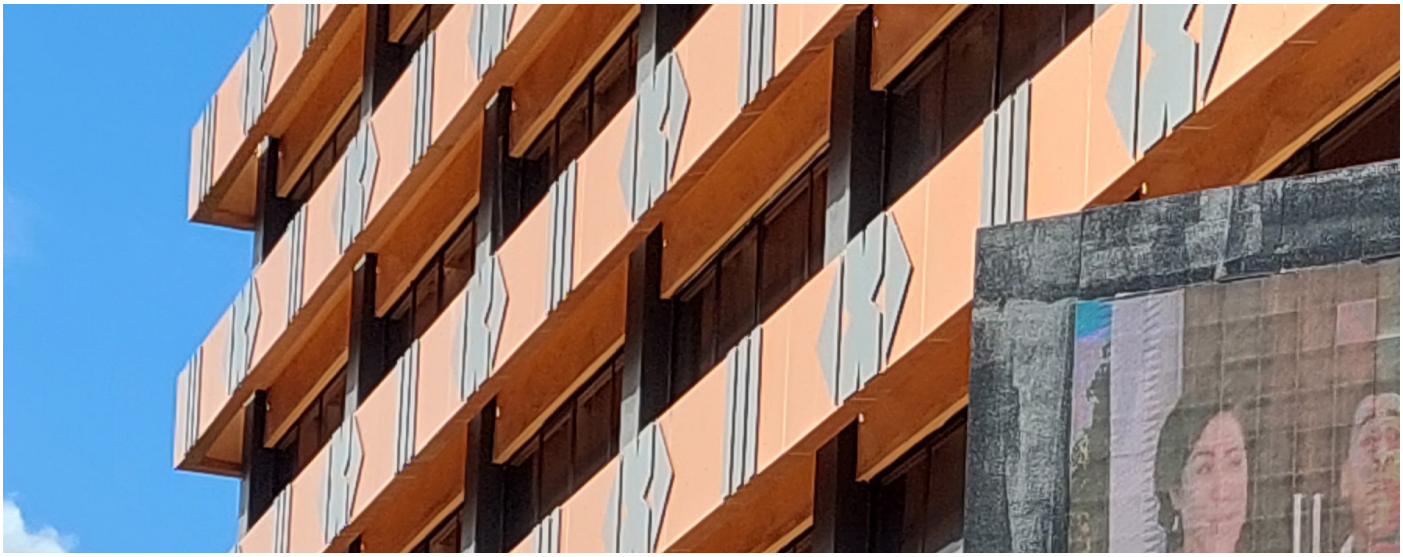
"Building inspector to have authorized certificate from FNU"

"FNBC- Totally agreed with the amendment"

"Review of Fiji National Building Code as it's not been reviewed after so long"

"Requesting for Skill Development short courses on Workplace Leadership and Management"

"It would be good to see Fiji adapt to the new development methods and design codes"



PRIF SURVEY

PRIF (Pacific Regional Infrastructure Facility) is an organisation established by multiple international donors and agencies aimed at providing technical assistance and advocacy for nations in the Pacific Region to develop resilient and sustainable infrastructure.

In 2021, PRIF conducted a Regional Diagnostic Study on the Application of Building Codes in the Pacific using Fiji as a case study. This study involved building interviews and a participatory workshop with infrastructure ministries, local construction consultants and contractors to comment on the suitability of existing laws and policies, how they are enforced, overall effectiveness, and recommendations for improvement. Results from the survey were analysed and are considered to be important feedback to supplement the above noted survey conducted for this report.

Highlights of the feedback from workshop participants relating to compliance and enforcement are shown in Figure 3.1.

Figure 3.1 Feedback from Building Industry Stakeholders at PRIF Workshop

- FNBC should apply to all buildings in all locations
- Need to address non-compliance resulting from builders not using the FNBC due to high cost of quality structural engineers
- Three-tiered compliance for homes depending on vulnerability to climate and disasters:
  - Gold - building must comply with FNBC and designed by a qualified engineer
  - Silver – buildings designed according to FGCH standards by a construction practitioner with a technical qualification;
  - Bronze – building constructed by owner in accordance with simple pictorial guide
- Suppliers should show proof that materials are certified according to FNBC standards
- Local builders lack skills, mobility and ethics
- Owners and suppliers should be held accountable for supply of compliant building material
- National certification needed for consultants, contractors, project managers and trade people
- Building Board to administer compliance of building permits to replace Central Board of Health
- Non-compliance should attract heavy penalties and fines
- All building sites should be review by qualified building inspectors …to improve compliance and enforcement, private sector inspectors could be used
- Fellowship program led by CIC could train construction practitioners
- FNBC update should coordinate with educational institutes.

4.0 GAP ANALYSIS

A Gap Analysis of matters affecting compliance and enforcement of the FNBC was conducted to get an understanding of critical issues. Based on a review of legislation, policies, stakeholder consultation, best practices, and the project and PRIF surveys, the following gaps were identified:

LEGISLATIVE AND REGULATORY GAPS

Inadequate legislation or regulations for punitive measures

Options for Local Authorities to enforce the FNBC through punitive measures such as fines and restrictions are limited. The only punitive measures applicable to the FNBC are in the Public Health (National Building Code) Regulations 2004. The low fine amount ($200 FJD) does not leave an enforcement officer with a strong tool to enforce the Building Code as it is barely sufficient to deter those who are wilfully non-compliant. The process for approving the fine is lengthy and requires that after a fine is issued that it be decided in a court of law whether the imposition of the fine is valid. Stakeholders have indicated that this process takes months and sometimes years before there is a hearing date.

No legislation or regulations for quality control of building products

The Fiji Competition and Consumer Commission does not include testing and approval of building products and systems. This most likely is due to the huge investment involved in establishing the technical capacity to undertake such tasks. The result is that there are many building products available in Fiji and throughout the Pacific that have not undergone any testing or evaluation to prove claims made by manufacturers regarding stability or environmental quality. For example, plywood imported from Asia does not have sufficient treatment to withstand termite attack meaning it weakens very quickly, often in under a year, and will not perform to FNBC standards for durability or stability.

No regulation of who can prepare and stamp building permit drawings

Currently, building permit drawings can be prepared and lodged by any individual. There is no means of knowing if building permit drawings have been prepared by a suitably qualified person who is aware of FNBC and other standards. The fast-track program, as indicated in the Regulation of Building Permits Regulations 2020 forms - Part 3, does require building permit drawings to be prepared and signed by a Registered or Licensed Professional, but does not identify the associated appropriate expertise.

Lack of a consistent legal framework

The responsibility for enforcing the building code now sits with several ministries and agencies and does not sit with the correct agency assigned to empower it. The FNBC is a regulation of the Public Health Act, yet since 2017 the Ministry of Infrastructure (MPWT) is the agency responsible for updating and administering the building code. Furthermore, inspections are carried out by staff of the local authority who have no direct relationship to MPWT or the Public Health Act, but instead are governed by the Ministry of Housing and Local Government. A clear path is needed in the legislative framework.

Lack of standards and enforcement for informal settlements

Informal settlements occur primarily in urban and peri-urban locations where homes are constructed on state, freehold or customary land with or without the consensus of the landowner and without any legal form of security or tenure. Buildings are typically constructed without a building permit, building inspections or certificates of occupancy, so the quality of design and construction for structural adequacy, fire safety, health and sustainability is not reviewed or monitored. As a result, homes in informal settlements are vulnerable to natural disasters such as cyclones, flooding and earthquakes because they do not comply with FNBC standards. NFA has indicated these homes are the top-rated cause of fire in Fiji, primarily due to faulty wiring installations.

PROCEDURAL GAPS

Lack of building permit submission standards

Currently all building permits are submitted in paper format using various iterations of the building permit application form. Each Local Authority has their own format and internal process and this creates issues for approval authorities such as FRA and EFL when they receive building permit applications in different formats with varying degrees of information. This leads to a confusing and convoluted flow of information causing lost data and significant delays. This issue has become such a problem that approval authorities have started to encourage developers to lodge their relevant forms directly instead of through the Local Authority to prevent delays. A list of required submissions is not mentioned in any acts, regulations or Local Government policy, except Ba Town Council has a checklist for major developments, commercial industrial and residential developments, see Appendix C.

Lengthy processing times

The length of building permit processing times is a long-standing challenge amongst most Local Authorities and is often due to incorrect or insufficient information submitted by building developers or poor communication and follow up with approval authorities.

Lack of Documentation and Information Sharing

No formal system exists for the exchange of documents among agencies when building permits are processed, neither is there a centralized database. Further lack of coordination exists between data collected by Local Authorities and the Department of Statistics. As a result, there are no mechanisms to ensure transparency within the building permit approval process or to reduce the number of inconsistencies or potential for fraud. Likewise, industry trends cannot be easily tracked which affects the effectiveness of future updates to the FNBC. It is not clear whether agencies such as NFA, EFL and WAF are required to refer to the standards specified in FNBC and whether they have regular access to the standards. Confirmation is also needed on the process for agencies to conduct follow up inspections and whether an inspection that does not meet approval standards is forwarded to the Local Authority for enforcement or if the agency has their own enforcement procedures. A lack of procedures within most of the Local Authorities and nation-wide has created a system that compromises enforcement.

Lack of Consistent Data

The most notable gap in this regard is the lack of consistency in building type terminology which affects the ability to track and monitor building and construction data. There is also a lack of consistency in requiring applicants to provide the location of the building when applying for a building permit. This, along with the lack of street addresses in rural and suburban areas makes it difficult for inspectors to locate buildings.

Lack of applications for Certificates of Occupancy

As seen on the graph on page 6 (Figure 2.5), the gap between the number of annual building permit applications and the number of Certificates of Occupancy (CO) issued is quite large, with the number of COs lagging far behind. While some of the low numbers of COs issued can be attributed to buildings that are only partially built, the majority is likely due to a lack of incentive to apply for and obtain the CO because many buildings in Fiji are not insured. The obvious benefits for health and safety of the building and occupants that is inherent in obtaining a CO goes without question. What is lacking is awareness of the benefits. A media campaign outlining the benefits of knowing that a building is safely constructed would be an important incentive to motivate builders and residents to take the extra step and apply for the CO. An online system to monitor the issuance of COs along with building permits is also lacking except for a select few locations and building types.

Lack of direction for building permit lodgement and timeline for approval

While the Regulation of Building Permits Act 2017 does go some way to attempt to regulate the application process for building permits, there is a lack of clear step-by-step guidance for local authority staff and the public regarding documentation requirements and realistic processing times. There is also no clear way to determine which applications could be processed entirely in-house , which ones need to be shared with approval authorities, and which ones should be sent to MPWT for review. A process has been developed for urgent developments through the BPEC (Building Permit Evaluation Committee), however these timelines are somewhat unrealistic for a thorough assessment and have rarely been implemented.

Registration of professional engineers

Engineers Fiji is the professional body responsible for certifying, regulating and registering engineers for practice in Fiji under the following classes:

- Fellow FFIE
- Professional Member MFIE
- Technical Member TFIE
- Associate Member. AFIE
- Affiliate Aff.FIE
- Graduate Member Graduate FIE
- Student Member

There are very few new members certified annually. Since the number of registered engineers is not growing along with increased development, there is a lack of certified individuals to stamp drawings and issue Cyclone Certificates which creates delays. We also note that EF does not have a naming convention that clarifies the type of engineering which members have been certified to practice. It is important for Local Authorities to be clear on what class of engineer they are willing to accept for preparing and stamping building permit, electrical, civil, mechanical and structural drawings.

Inconsistency in fee structure and information

A clear, centralised billing structure that can be easily accessed by developers that shows building permit fees and costs for additional expertise, inspections and approval authorities fees is lacking. Currently developers must go to each individual approval authority and pay fees which can delay processing times. A fee structure for a proposed development with a higher risk or larger scale is lacking.

Lack of building inspection software and documentation protocol

Control of documentation and record keeping is essential not only to protect the Local Authority from future litigation but also to develop a bank of knowledge that can be used for future decision making on how building permits, inspections and enforcement are managed. As with many other South Pacific countries, the entire building inspection process is conducted on paper and sometimes downloaded onto local computers and not shared in a centralised database. This makes it very difficult to access information needed to learn from past projects and develop new ideas to enhance implementation.

Lack of procedures for safe building demolitions

While the Public Health Act and FNBC have standards and procedures to require a building to be demolished, there are no supporting policy documents or instructions to describe how to safely do it. When a site is deemed dangerous, the current process is that an objection to a demolition notice can be disputed with the Local Authority, and the decision is open to appeal. The owner has 3 months to carry out the demolition, but regulations for how to safely demolish do not exist.

No protocol to refer large-scale applications to DBGA

Local Authorities currently make an ad-hoc decision on whether to refer large-scale and complicated building permit applications to DBGA for input since there are no procedures. A number of large-scale buildings have not been reviewed or inspected by DBGA who currently have the most qualified staff - resulting in buildings that do not comply with aspects of the Code. A clear lack of trained professionals at Local Authorities adds to the issue.

COMPLIANCE GAPS

The power to direct the services of the police to enforce the direction to close the site should be part of the building inspector's arsenal, but there is a lack of formalized procedures to guarantee safety.

Lack of Awareness of FNBC and Compliance Requirements

Initial investigations show that there is little awareness of the FNBC in the wider community. Members of the building industry are aware of the FNBC, but many are not in possession of a copy (available in printed form and on MHMS website). Awareness is at its lowest in rural and remote areas where enforcement of the FNBC beyond large tourism developments is non-existent. While tourism sites in rural areas on leased land are required to get Development Permission and a Building Permit, buildings in villages and other iTaukei lands are overseen by the MIA, MOH and MRMD and are subject to an approval system involving the requirement of a 60% majority of the village council approving of the building.

Building permit approval process not enforced for all buildings in Fiji

Due to an exemption in the Public Health Act (villages on iTaukei-owned lands are not required to comply with the Act), the FNBC has been poorly enforced in iTaukei villages except for new construction on leased lands for schools, infrastructure and tourist facilities. Prior to 2018, Public Health Officers provided advice and assistance in rural areas and iTaukei villages, but since Rural Local Authorities were abolished, there is a lack of skilled building plan reviewers and building inspectors within MOH. Without the necessary technical expertise, homes may be vulnerable to collapse in extreme weather events. This has been proven in the aftermath of TC Winston in 2016 where approximately 15% of the population was rendered homeless, mostly in rural villages.

Inadequately trained building permit reviewers

Currently there is no formal training for building permit reviewers; most reviewers are trained in house. It is not clear whether staff have access to all the referred standards in the FNBC to adequately assess building permit applications. Without a clear protocol for educated, qualified and trained personnel to review building permit applications, compliance and safety are compromised. Prior to 2018, a building reviewer and inspector certification program was offered at FNU in collaboration with MOH. This type of program is currently lacking.

Inadequate fines for non-compliance

Regulations for fines for non-compliance have not been reviewed for many years and are limited by dollar values that have not increased. The Public Health National Building Code Regulations 2004 specifies that the fine should not exceed $200 FJD with an additional $4/day for continued non-compliance. This low amount is not sufficient to act as a deterrent. Since the amount of the fine is contained in an Act of Parliament instead of in a regulation or policy, it is very difficult to amend and keep up with inflation.

Inconsistent requirements for hotels

Licensing of hotel operators from the Fiji Licensing Board does not specify that a hotel operation needs to have a Certificate of Completion to operate, even if there are substantial changes to the building. It is not clear whether this requirement exists in other regulations. The lack of cross-referencing could potentially lead to hotel operations that are not compliant with the FNBC. Procedures to require all hotel operations, particularly when converting a residential structure to a hotel, to have a building inspection by a qualified building inspector to determine compliance with the FNBC are lacking.

Expansion of standard house plans available to residents

The MOH and MRMD have undertaken a number of programs to offer house plans to Fiji residents of low-income including a recent initiative for a disaster-resistant 2-bedroom home designed to withstand Category 4 cyclones. These initiatives should be expanded to include a variety of home sizes so residents can select a home that would benefit their unique family needs.

ENFORCEMENT GAPS

Self-build homes are not well regulated

Self-build homes and small structures in both urban areas and iTaukei lands are poorly regulated, inspected and monitored, and many homes are constructed that do not comply with the FNBC due to lack of awareness and engagement from builders and homeowner. Another reason is the perceived increased cost in constructing a house that is compliant with the FNBC (e.g., more nails, more bolts, more concrete, etc.). All self-build homes have the right to be connected to the electrical grid, where available, regardless of whether a building permit has been issued. Negative consequences of the lack of consistency in requirements and enforcement is evident in that the largest number of fires in Fiji are caused by faulty wiring in homes, many of which that have not been constructed according to FNBC standards or by a professional electrician.

NFA does not provide inspections for homes

The National Fire Authority's annual budget only allows them to inspect larger buildings, rather than homes which are the cause of most fires. We are aware that negotiations are currently in place to expand the scope of services for NFA to include residential buildings in the near future. Since EFL does not usually inspect wiring inside of a building (only connection to the grid), there is a lack of monitoring of wiring installation inside homes.

Inadequately trained building inspectors

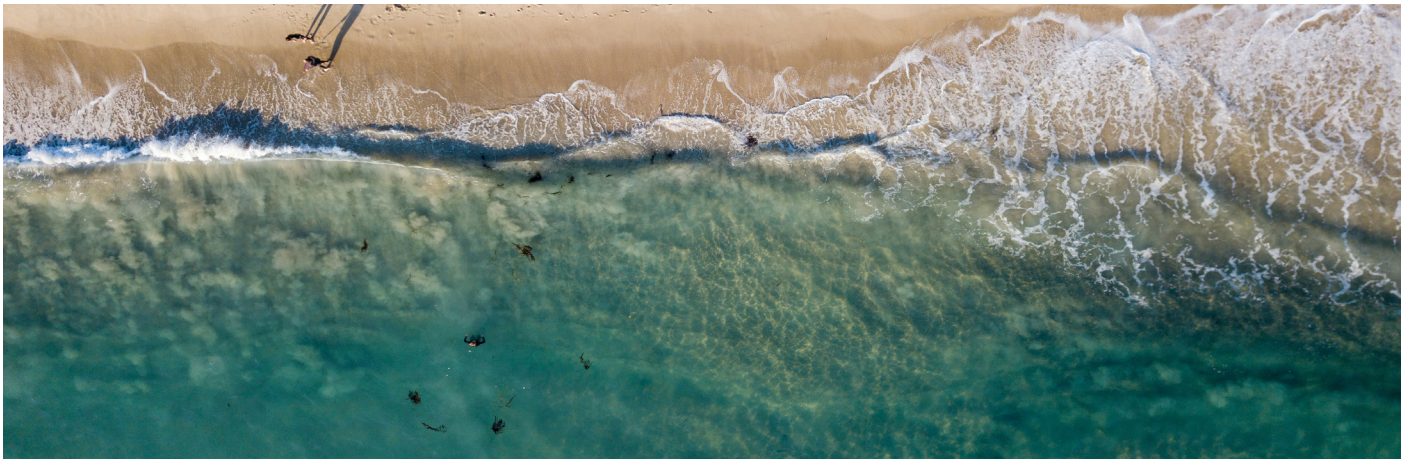
Similar to building permit examiners, there is no nation-wide formal process for training building inspectors, although some Local Authorities have their own individual training regimes. There is also a lack of training specifically on compliance with the FNBC and associated standards like the Australian Wiring Rules. Without a formalized process to ensure quality building inspections, there is no assurance that compliance with the FNBC is adequately enforced by building inspectors.

Limited access to building sites

Inspectors have noted that poor access to building sites hinders their ability to adequately monitor construction. Inspectors lack suitable vehicles for rough terrain and dirt roads and, like many Pacific nations, the lack of street addresses makes locating and accessing sites particularly difficult. Inspectors have noted that some sites cannot be located and are therefore not inspected.

Contractor ability is not regulated

Currently, there are no standards, policies or regulations to guarantee a minimum competency for contractors regarding safety, quality of work, or ability to interpret and follow the FNBC and related standards. Membership in the Fiji Master Builders Association is not mandatory, and being a member is not a requirement for entering into a construction contract or beginning construction on a building or site. It is up to the owner to decide on the competency of the contractor that they are comfortable with.



IMPLEMENTATION GAPS

Inadequate Cost Recovery

The monitoring and enforcement of construction activities in Fiji incurs significant operational costs regarding salaries, transportation, and administration. The current fee structure for development permission and building permit applications is wholly inadequate to cover such significant costs.

A comparison to building permit fees charged in other Pacific nations demonstrates that the building permit fees for Fiji are very much below average, see Table 4.1. A graduated fee structure based on building type is also not available.

Table 4.1 Comparison of Building Permit Fees

Country	Government body	Building Permit Fee	Cost (In FJD)
Fiji	Suva City Council	FJD$3,388.00 All Building Types	$3,388
Samoa	Ministry of Works Transport and Infrastructure	WST $25,000 Commercial	$20,175
New Zealand	Auckland Council	NZD $10,170 All Building Types	$14,305
Australia	Building Act	AUD $2,850 Class 1 or 10 (0.19%) + fee for private building certifier to review	$4,310

High Cost of Legislation and Standards

For the last decade or more, building professionals in Fiji have been relying on the standards in the Australian and New Zealand building codes for the preparation of building permit drawings since the FNBC is out-of-date. However, acquiring access to these Codes can be quite costly. Furthermore, a typical non-residential building may be subject to as many as 50 to 100 Acceptable Solutions published by the Australian and New Zealand building code associations, and each of these can range from $75 to $500 AUD. The cost of obtaining all of these standards is out of range for the small builders, homeowners and building designers, which increases the likelihood that drawings are prepared without knowledge of the standards.

High Cost of Consulting Fees for Smaller Buildings

Over 70% of construction works are classed as residential, and many Fiji residents do not have the financial means to hire adequately trained building professionals such as architects and engineers. Hourly charge-out rates for engineers are generally not factored into the cost of construction. Larger buildings do have adequately trained design professionals who prepare building permit drawings mainly because obtaining adequate insurance for the building is dependent on receiving a Cyclone Certificate which must be stamped by a structural engineer who is a member of Engineers Fiji. The construction budget for larger buildings tends to absorb the high fees for adequately trained building professionals within the budget, but professional fees for smaller buildings and homes is often cost-prohibitive.

High Cost of Building Materials

The increased cost of building materials that comply with the Building Code, particularly for residential projects, deters owners and developers from seeking a building permit. By avoiding building permits, builders, for example, are able to use less steel in reinforcing, smaller block sizes and smaller timber sizes resulting in a cheaper building, but one that is not code compliant or resilient to extreme weather events.

Non-compliant imported building material, products and equipment

Currently, there are no procedures for quality control of building material, products and equipment that are imported to Fiji. There are also few controls for associated safety standards or requirements for imported products. As a result, builders will often use the cheapest products available on the market, trusting that the importation of these products has been regulated, but many of said products may not meet sustainability or safety standards. For example, imported fire safety equipment is often inadequate and replacement very difficult due to product unavailability and import fees.

Lack of regulation of domestic building materials, products and equipment

Building materials, products and equipment manufactured in Fiji do not always have adequate labelling, testing procedures and certification to guarantee safety and quality. For example, windows manufactured in Fiji do not have R-values or u-values to guarantee a level of solar resistance. Likewise, treated timber is not always adequately manufactured yet it is stamped as adequate since there are no testing facilities in Fiji or other enforcement procedure.

Insurance limitations

Insurance is limited to the few who can afford it and until recently insurance companies have restricted coverage to those buildings that are issued a Cyclone Certificate by a certified engineer who is a member of Engineers Fiji. This service is cost-prohibitive for low-income families and it is at times a cumbersome process as there are only approximately 20 engineers in Engineers Fiji who are certified. A compliance letter issued by the Local Authority is not accepted by insurance companies as assurance that a building has been designed and constructed as structurally resilient to cyclones since there is a lack of trained and qualified plan reviewers and building inspectors.

In recent months, several insurance agencies, through collaboration with the United Nations Capital Development Fund, now offer insurance for buildings without a Cyclone Certificate that meet structural safety standards and other requirements. Payouts are rated according to the intensity of the cyclone and the location of the building. Expanding on these recent initiatives so that insurance is more readily available will provide incentive to build according to FNBC standards. A policy that bridges the gap between building insurance and FNBC standards would be extremely helpful to clarify the FNBC standards that must be adhered to for the different types of insurance offered.

Lack of surveyed land

When land tenure is not fully secured and formalized through leasehold or freehold ownership, there is no legal way to input the location of the property on a building permit application form. The inability to comply with a key requirement serves as a major deterrent to applying for a building permit for homebuilders who have informal agreements on land which has not been surveyed. The result is that large numbers of homeowners build without any regulation or technical support placing families in danger during earthquakes, extreme weather events and domestic fire.

Lack of educational programs for building industry

While higher education institutes like Fiji National University (FNU) and the University of the South Pacific (USP) have building-related programs for architects, engineers and electricians, there are no programs for building permit examiners or building inspectors. Existing programs currently provide a general introduction to these topics, but do not go into very much detail regarding compliance with the FNBC and associated regulations. The lack of attention to building permit examinations and building inspections means that graduates of existing programs are not suitably trained to perform these tasks. The lack of trained examiners and inspectors is one of the key gaps in compliance and enforcement of the FNBC.

5.0
ACTION PLAN

It is clear there are many opportunities for improvement to the existing building permit approval process, and the update to the Building Code provides the opportunity to address key implementation issues that will strengthen compliance and enforcement.

To address the gaps, an Action Plan has been created based on the following key elements:

- **Analysis** of the implementation issues within the building permit approval system derived from stakeholder consultation and survey results
- **Knowledge** of best practices in Fiji, the South Pacific and internationally
- **Understanding** of the key objectives for updating the Fiji National Building Code
- **Commitment** to advancing the national directive to maximize opportunities for climate resilience
- **Empowering** the building industry and Fiji residents to use, reference and comply with the Fiji National Building Code for all development projects in Fiji
- **Supporting** for the administrative change of MPWT as the key administrative body for the FNBC and the creation of a new Building Act and Building Regulations

The Action Plan presented in this chapter has two principal components:

National Strategies affect Fiji as a whole, and involve the input and coordination between many government industries, departments and stakeholders. These issues are large-scale and will require a considerable amount of funding to implement.

Four strategies we present here in this chapter are:

- Rural areas - iTaukei Land
- Informal Settlements
- Post Disaster Re-construction
- Achieving Climate Change Objectives

Recommended Tasks are specific to the FNBC. They provide specific recommendations to address the gaps. There are 61 recommended tasks associated with 10 objectives to strengthen compliance and enforcement of the FNBC.

Rural Areas - iTaukei Land

The regulation of building on customary land is an issue in many countries in the South Pacific as well as colonised countries such as New Zealand, Australia, Canada and the United States. Samoa and New Zealand, for example, regulate all buildings regardless of land tenure, however Canada, the United States and Australia have varying degrees of enforcement on customary land. This is intended to give indigenous populations the autonomy to regulate their own building activities which has been met with varying levels of success. The US has reported that native American reservations are prone to house fires due to non-compliant wiring and in Australia Aboriginal populations have been left vulnerable following natural disasters. Some have sought to remedy this by voluntarily enforcing local building codes or developing specific codes for native land such as the United State Environmental Protection Agency Tribal Green Building Toolkit.

As explained on page 17, compliance with standards in the FNBC is not currently enforced for buildings constructed in rural areas and in iTaukei villages. Unfortunately, these buildings are the most likely to be damaged during extreme weather events since they have not been properly constructed according to FNBC standards. Due to lack of enforcement, there is also a lack of data in times of natural disasters which makes it difficult to coordinate an appropriate response.

Access to qualified building industry experts needs to be increased in rural areas since the FNBC has not been directly enforced. Fiji's former administrative structure of having government representatives in rural areas should be reinstated (i.e. Rural Local Authority), and the representatives should be trained to understand how to apply FNBC standards for new builds and up-grades, with a focus on cyclone resilience, fire safety and electrical wiring.

Alternatively, the Ministry of Housing, Ministry of Local Government, Ministry of Rural and Maritime Development and Disaster Management, Ministry of Health and Medical Services, and Ministry of iTaukei in collaboration with MPWT should offer a program to train 2 or 3 persons from each province (yasana) or each district (tikina) to work with homeowners and builders to ensure buildings are constructed to FNBC standards. While the population of rural areas is approximately 390,000, the population declined by 0.7% in 2021 meaning that the number of new buildings constructed is likely a manageable amount for this type of program. Based on growth patterns, the FNBC building officer could potentially look after more than one tikina.

A third option is to reinstate the duties of the Public Health Officers of the Ministry of Health and Medical Services who performed the duties of plan review, building inspections and collaborating with residents for new buildings prior to the 2018 re-structuring.

The duties of the FNBC building officer would include offering advice to anyone on how to build or upgrade a home to FNBC standards, assist with access to funding programs, perform building inspections to identify best location and orientation, installation of cyclone resistant construction, wiring, green building practices, and keep records on homes that have been constructed in compliance with FNBC standards. Ultimately, buildings that have been assessed and deemed as compliant by the FNBC building officer would then be available for insurance (if the Fiji Insurance Board is satisfied with the process).

Education and awareness need to be prioritised above enforcement and fines with a focus on improving compliance over a period of time. The FNBC building officer should foster an advisory role with builders which could involve a mixture of in-person inspections and self-reported inspections made over a mobile phone app which will not only save time and travel for inspectors but foster an element of trust with the builders.

To incentivise compliance with the FNBC and to maximize safety and climate resilience, a financial assistance program should be simultaneously offered whereby residents are provided with structurally sound materials such as cyclone-resistant fasteners or green building equipment such as a water storage tank or low-flow sinks and toilets, and the homeowner is provided a financial reward when the building is inspected during construction and the materials and equipment are observed to be successfully installed. The Government of Fiji should develop this program in partnership with funding agencies such as the World Bank's Green Bond program, and it should be used to ensure compliance with FNBC standards. Part of the FNBC compliance offer's duties would be to inspect buildings under construction and post construction to ensure that the funded items have been installed, after which they would issue a financial rebate.

Having a local FNBC building officer who will advise on compliant building practices and promote the enforcement of the FNBC, along with funding programs for fastenings and other products, will significantly increase the amount of FNBC-compliant buildings in an informal manner.

Another means of indirectly promoting resilient buildings in rural areas is the MOH's recent incentive. The "2-bedroom House Plan" program in rural areas provides funding, assistance and architectural plans to construct a home where the central part (living and cooking) is constructed to withstand CAT 4 cyclones. The intention is that homeowners will be able to shelter within the core of the building, or return to their homes following a disaster with a portion of the building still intact.

The "core-house" program has been successful in other countries, and the MOH has indicated that several of them are currently under construction. This type of program is another good of example of a method to indirectly enact FNBC standards in the rural areas. To make this type of endeavour more enticing, it could be expanded to include several more home layout and size options to accommodate different family sizes and needs. It should also be updated to ensure that it is compliant with the energy efficiency standards in the FNBC.

Figure 5.1 Snip from MOH's website inviting residents to download standard home plans

Building Standards for Informal Settlements

Informal settlements can be found in urban, peri-urban and rural areas, and are completely unregulated and built without reference to the FNBC. The buildings are vulnerable to cyclones, flooding, fire, earthquakes, and can easily collapse. A number of different approaches to improving living conditions in informal settlements have been used around the world, including:

- **Settlement Relocation** - Government facilitates the acquisition of a new location, constructs new homes, and re-locates people to the new settlement. The vacated land is then formally developed by the private sector.
- **In-situ Upgrading and Formalization Programs** - In addition to offering programs to upgrade local infrastructure and formalise land tenure, people living in informal settlements are offered government-funded, or subsidised, building materials or products, such as energy-efficient lighting, low-flush toilets, fire-resistant cladding or roofing, and the government assists with delivery and technical advice, installation assistance and/ or oversight
- **Controlling Growth via Punishable Offence** - Legislation is passed that makes it illegal for new, or existing, informal settlements to be constructed or expanded, and households are relocated and offered alternative secure tenure options such as public or social housing.

The latter recommendation is based on the idea that informal settlements are not the ideal living situation because most buildings do not meet FNBC standards. If informal settlements become a punishable offense, then the establishment of new informal settlements would hopefully be greatly reduced. The ultimate goal is to reduce the amount of informal settlements for the sole reason that they are not resilient to natural disasters or climate change, and other safety concerns, and that a formalised and regulated program of assisted housing replace them.

Potential Strategies for Informal Settlements

- Re-locate to a regulated community such that homes are subject to the FNBC, and/or
- Improve homes, streets and services to comply with FNBC standards, and/or
- Enact legislation to prohibit any new informal settlement from occuring
- a combination of any of the above

Based on input from stakeholder consultation, a strategy for Fiji could be to enact a combination of any of the above three strategies, depending on the location and condition of the homes, roads and services. Existing informal settlements selected to be upgraded should be legalised with a proper survey and address so that they can be regulated under the FNBC. This could involve government lease of land from the landowners, and then leasehold titles are sold back to the registered informal inhabitants (at subsidised rates) after the land is legally subdivided.

Post-Disaster Re-construction

Buildings that are destroyed by cyclones and flooding typically are ones that were not constructed to Code. Other disasters such as tsunamis and earthquakes will sometimes destroy a building regardless of how well it is constructed, depending on the severity. In all cases, buildings that are damaged or destroyed need to be reconstructed and many homeowners, particularly in rural areas, will re-build as fast as possible, without regard to building code standards, so that the family can leave the evacuation centre and return home. As a result, many rural homes are constructed of recovered metal sheets and timber for roofing and walls that are fastened using available materials that are not cyclone-strength or flood-resilient.

Post disaster reconstruction is very complex. Coordination between the National Disaster Management Office (NDMO), the ministries responsible for rural and local housing and MPWT as the chief administrator of the FNBC is essential. A detailed strategy focussing on post-disaster building re-construction and compliance

with the new FNBC should be prepared. It should coordinate NDMO's existing disaster management activities, with an approach to quickly and safely "build back better", as well as other incentives such as the Rural Housing Assistance (RHA) Program which was enacted by MRMDDM to provide affordable housing assistance for low-income families that permanently reside in villages and rural areas who:

- Do not own a home (first-time owner)
- Whose house was damaged from previous natural disasters and needs assistance for new house construction or repair and retrofitting
- Own a home that requires addressing safety issues for vulnerable family members such as the elderly, disabled, women and children
- Own a home that requires retrofitting, and
- Need assistance for procurement and cartage of housing materials given his or her remove location from business centres

This incentive, and others from the Ministry of Housing, such as the First Land Purchase Programme, Housing Assistance to Fire Victims and Housing Assistance for persons Living with Special Needs Grant Program (see page 42), all financially assist residents in purchasing or constructing a home. But more funding is needed to tie into these programs and assist residents to build safe, stable and sustainable homes that comply with FNBC standards.

Recommendations to Build-Back-Better and Comply with the FNBC

Prior to Disaster

- Develop a strategy to have cyclone-grade fasteners and building materials on-hand prior to the next disaster or to be able to quickly attain it. Financial rebates that are paid after the homeowner demonstrates that the re-construction meets FNBC standards would assist the success rate.
- Ensure knowledge of how to reconstruct is readily available. Available resources for homeowners include:
  - Fiji Home Building Manual, 1992
  - Fiji Shelter Handbook, 2018 by Shelter Cluster Fiji
  - Help for Homes: Tips to Build Back Safer, 2016, by Shelter Cluster Fiji
  - MTCS Guidelines for Improving Building Safety iTaukei, 2019
  - Fiji Green Construction Manual for Homes, 2023

Post-Disaster

- Provide cyclone-resistant construction material to homeowners, such as wall and roof material with the proper strength, fire-resistance, and energy efficiency, with guidance on how to install and connect properly.
- Encourage use of government-sanctioned standard plans, such as MOH's Standard Plans for a Category 4 cyclone-resistance core home, which should be instantly available on a website, and any other standard plans that are appropriate.
- Foster donor programs for financing or construction supervision and advice available to all residents affected by the disaster
- Develop a comprehensive program where the Government of Fiji, with the assistance of donors, builds the entire home in rural and urban areas and ensure all construction meets FNBC standards.

Achieving Climate Objectives

The Climate Change Act (CCA), 2021, identifies a framework to promote a green and energy efficient future for residents of Fiji. Undertakings by government, agencies, organizations, building contractors and others are required to comply with the sustainable standards in the Act, the National Adaptation Plan and the National Development Plan regarding green energy, green building construction, new techniques for solid waste management and clean air, among others. Section 72 of the Climate Change Act requires the FNBC to comply with the adaptation objectives in the above documents, which have a target a nation-wide 30% energy reduction by 2031.

To achieve the above requirements, a five-step approach to achieving green construction objectives is recommended:

5-Step Approach for to Achieve Climate Objectives

- Include standards in the FNBC that achieve the objectives of the Climate Change Act
  Ensure green buildings standards are achievable given limited resources and funding
- Focus on qualitative standards, rather than quantitative
  Use standards that inadvertently achieve the 30% reduction target without having to calculate it
- Information sheets, manuals, examples demonstrating how to achieve standards
  Create a series of brochures, videos, and the like to explain how to comply with FNBC green standards
- Collaborate with Climate Change Department (CCD) on procedures for sustainable development
  On-going communication and reporting to share objectives, ideas, methods, expected results
- Develop monitoring system to measure success of achieving 30% energy reduction target
  Measure energy savings achieved by using a green building approach and for building types and locations

The 5-step approach to achieve climate objectives should be administered by the lead ministry - MPWT.

Recommended Tasks

Based on the gap analysis, 10 implementation objectives have been created to increase capacity for compliance and enforcement of the FNBC.

Each objectives has a number of recommended tasks that respond to the data in the gap analysis, surveys and stakeholder consultation, as detailed in the next section.

<u>10 Objectives</u>

- Strengthen **Legislation**
- Strengthen **Procedures**
- Strengthen **Policy**
- Strengthen **Awareness**
- Strengthen **Capacity**
- Strengthen **Resources**
- Strengthen **Compliance**
- Strengthen **Enforcement**
- Strengthen **Quality**
- Strengthen **Funding**

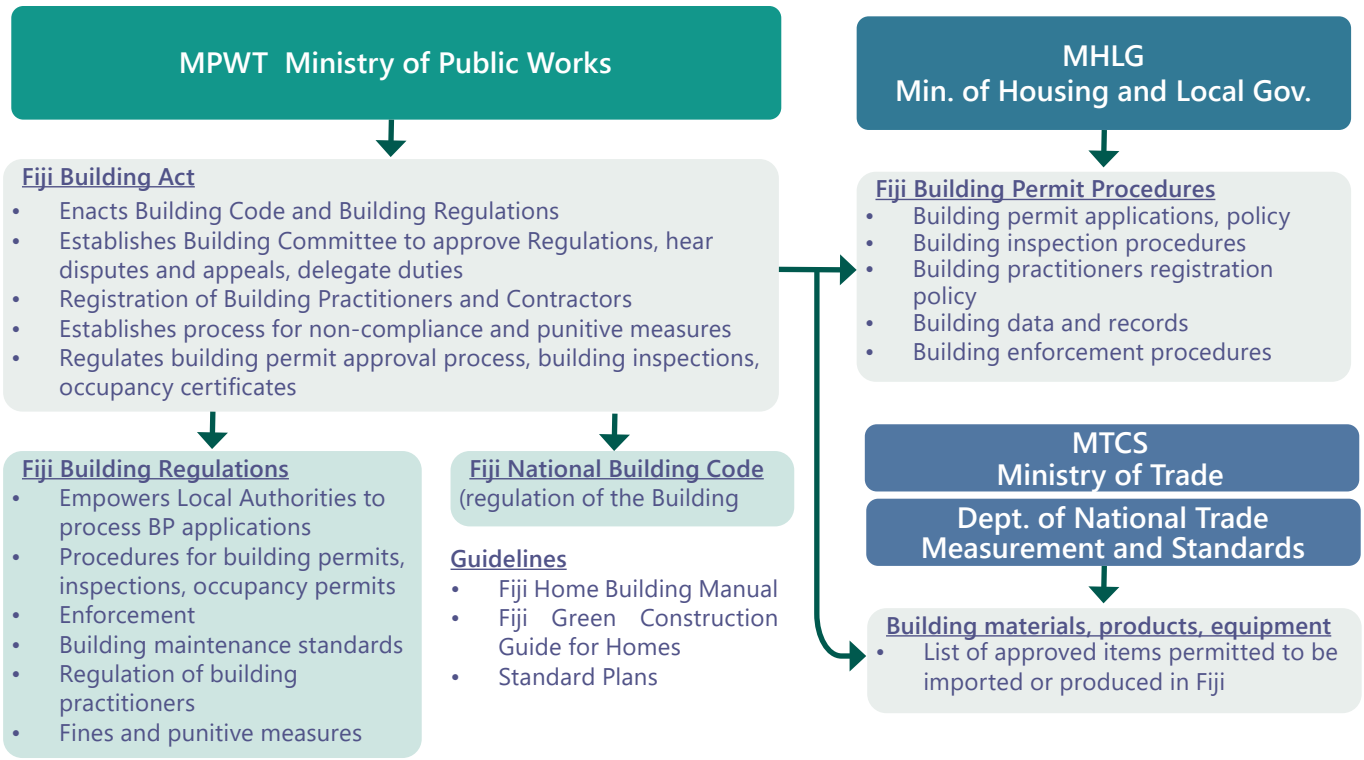
A Strengthen LEGISLATION

Strengthening legislation is critical for improving compliance and comprehension of building legislation in Fiji. Current legislation is outdated and fractured across several different ministries with conflicting mandates at times. There is an urgent need to coordinate legislation and approvals among ministries and government departments so that the processing, review and appeal procedures for building permit applications are comprehensive, easy-to-follow and enforceable. The structure of the legislation and delegations of authority are key to ensuring the building code is regularly updated, well publicized, and effectively enforced.

The change in administrative power from the Ministry of Health to the Ministry of Public Works which began in 2017 needs to be legally sanctioned. A companion document to this report, entitled "Legal and Institutional Arrangements Report" and "Parliamentary Submission Report" outline details for the transfer of power to MPWT. For the sake of clarity, we will repeat some of the recommendations here, but advise the reader to refer to the afore-mentioned reports for more details.

As shown in Figure 5.2, the new legal framework will have a new Fiji Building Act that will be the parent legislation for the Fiji National Building Code and the Fiji Building Regulations (both of which will be enacted as a regulation of the Fiji Building Act). The Fiji Building Act will have the bulk of the authoritative standards while the Fiji Building Regulations will have the administrative tasks defining how to process building permit applications and appeals. The Fiji National Building Code will have standards for how to achieve the objectives stated in the Fiji Building Act.

Figure 5.2 Proposed Legal Framework for the Administration of the FNBC



New Building Act

.1

The new Building Act will be administered by MPWT, with DBGA (Department of Building and Government Architect) taking the lead. The new Building Act should identify a complete list of approval agencies required to complete a building permit and empower the local authority to enforce the building code. It should address responsibilities of local authorities, owners, building professionals, building practitioners, product manufacturers and suppliers. It should also reference the Ministry of Trade as the authority responsible for the approval, supply and interpretation of building standards for acceptable solutions and verifications, for example, the newly created Fiji Wind Load standard FS 1170.2, as well as standards for building materials and products, particularly those that are imported. Any buildings that are exempt from code compliance should be listed.

New Building Regulations

.2

Building Regulations are an important implementation tool that defines requirements for items such as building permit approval procedures, number and type of inspections, issuance of Certificates of Occupancy, enforcement, fines, punitive damages, and appeal procedures. It is important to have these matters included in a set of Building Regulations since many items are subject to change, and it is easier to update a set of Building Regulations than a Building Act. Many countries have a set of Building Regulations that is separate from the Building Act so that a more timely response and action can be taken to update regulatory procedures on a 5 or 10 year basis.

Establish Building Committee

.3

To ensure that Fiji has a lawful process for administering the Building Code, a Building Committee, established under the new Building Act, is recommended as an appropriate tribunal for decision-making on such matters as:

1. Approval Of Regulations

- Approve and update regulations and policies, such as updates to the FNBC and Building Regulations

2. Appeals of Building Permit Procedures

- Establish procedures for settling disputes and hearing appeals
- Settle disputes and hear appeals as needed

3. Delegate Duties

- Enable Ministry of Trade to enact procedures for acceptable building materials, products and equipment
- Approve budgets for the FNBC Implementation Team and other supporting studies
- Approve human resources needed to complete implementation tasks

The Building Committee is recommended to have members from the following organizations, in addition to relevant government ministries:

- **Construction Industry Council**
- **Master Builders Association**
- **Engineers Fiji**
- **Fiji Architects Association**
- **Fiji National University**
- **University of South Pacific**
- **Local Government**
- **Town and Country Planning**
- **Water Authority of Fiji**
- **Energy Fiji Ltd**
- **Fiji Roads Authority**
- **Standards and Measures MTCS**
- **National Fire Authority**
- **Fiji Building Designers Association**
- **Fiji Surveyors**

Building permit applications that have been declined by Local Authorities can be appealed to the Building Committee for consideration with the onus on the developer to present compelling evidence. Procedures for the operation of the Building Committee should be outlined in the Building Act, including the requirement to declare a conflict of interest by any member of the committee.

Approve Fiji Wind Speed Standard FS1170.2

.4

Section B Structure of the FNBC has standards for wind speed that are better served if the Fiji wind speed standard FS1170.2 receives approval and is used to calculate strength and stability of buildings. At present, FS1170.2 has yet to be approved by the Ministry of Trade due to the receipt of at least one objection from a member of the public several years ago. Since then, a number of stakeholder meetings between building professionals, members of the Wind Speed Committee, and the FNBC Consulting Team have resulted in several modifications to the standard which are included in the FNBC update. The best case scenario is to have FS1170.2 be approved so that a higher and safer standard, relative to the building importance, becomes the protocol. A new submission of the modified FS1170.2 along with additional public consultation should be initiated by the FNBC Implementation Team to enable the passing of the standard.

B Strengthen PROCEDURES

A selection of procedural changes are recommended to support the potential for increased compliance and enforcement capacity of the FNBC. These measures span a broad range, but all are geared toward increased clarity, efficiency and execution of the standards in the FNBC.

.1 Pre-Submission Building Permit Evaluation Process

A standard procedure in many building departments is to have a pre-submission consultation with building permit examiners to review a proposed building and identify issues that may need to be addressed. The pre-submission procedure has been proven to save time and increase awareness of standards that need to be complied with, thereby enhancing enforcement of the FNBC.

.2 Building Code Compliance App

A building code compliance app would be very useful to reduce processing times by using AI (artificial intelligence) to help designers, developers and plan reviewers to determine the sections of the FNBC and other documents that need to be complied with. The designer could enter the project details into the app, and the app would automatically display the relevant sections of the Code and any supporting documentation that would be needed as evidence of compliance. This tool would be equally useful for plan reviewers, and could be used to inform building inspectors of the relevant FNBC requirements.

.3 Online Building Permit Application System

An online building permit application form app would replace all paper applications forms, except for remote locations where internet service is unavailable. The online system allows people to submit building permit applications from anywhere with cell phone or internet coverage in Fiji, or at Local Authority offices. An example of this is Objective Build used by local councils in New Zealand and Australia.

Lami Town Council has implemented an online building permit application using Google Forms which follows the format of the Building Permit forms in the 2017 Regulation of Building Permits Regulations. While this effort is a step in the right direction and hopefully goes some way to simplify record keeping, Fiji should have a "nation wide" online permit app to ensure that local authorities are capturing and recording data that is coordinated among all. The online system will allow data to be collected across the country and will reduce the amount of paper used which supports Fiji's commitment to a more sustainable future.

.4 Online Building Permit Approval System

A logical extension to the above two recommendations is to have the building permit examiner's report and recommendations posted online, as well as the conditions of approval, if any. Objective Trapeze is an example of a software package used by local authorities in Australia and New Zealand to assess and approve digital plans once the application has been uploaded via the Objective Build platform. Objective Trapeze allows plan examiners to quickly communicate with the applicant should any queries arise. An online building permit approvals app could potentially be linked to the building inspection app mentioned below.

.5 NCPD Input Policy

The NCPD (National Council for People with Disabilities) has indicated a strong desire to be formally involved in the building permit approval system, and can potentially be one of the commenting agencies on building permit reviews. Through an online site inspection system, NCPD could also review site inspection reports and thereby be able to identify any potential issues to be addressed. A policy document or regulation should be enacted with details of when the NCPD is circulated based on building type, scale, location, occupancy. Protocol for the remediation process if NCPD indicates an objection to the proposed building or site treatment can also be formalised.

Online Building Inspection App

.6

A Building Inspection cell phone app that guides inspectors step-by-step and allows them to record and automatically generate inspection reports would not only speed up the time taken to evaluate compliance, but also can generate instant reports. Many building inspection apps are on the market, for example: Fieldwire and My Inspection App. Another example used in Australia is a customised version of the ARC GIS application called Survey 123. All of the apps mentioned here can be customized for the details of the FNBC.

Building Inspection Procedures

.7

A standard process for building inspections should be created for all of Fiji to ensure structural, safety and climate resilience standards are followed. Procedures to improve Building inspections should include the following:

Table 5.1 Building Inspection Procedure Recommendations

Building Inspection Protocols	Recommended Procedures
Gradated Inspections	Develop Building inspection schedules according to building type, with large and complicated buildings receiving a full range of inspections, see Table 5.2
Scheduling Inspections	Instructions on contacting the Local Authority and arranging for inspections
Landowner Contact	Procedures for when and how building inspectors should contact landowners
Agency Communication	Procedures for when and how agencies (EFL, NFA, WAF, NCPD) are contacted
Monitoring	Procedure to ensure EFL and WAF do not permit connection to services until the Building Permit has been approved
Ministry of the Environment	Procedures to coordinate inspections by the Ministry for developments subject to an Environmental Impact Assessment
Documentation	Develop an online system for recording building inspections and link data for all Local Authorities so all building construction in Fiji can be tracked
Follow-up	Develop an automated notification system for plan examiners, building inspectors, agencies and landowners including schedules, progress, outstanding issues
Equipment	Procedures to ensure building inspectors have all necessary equipment (safety boots, high viz jackets, hard hats, ladders, harnesses, measuring tools, first aid kit)
Education and Training	Requirements for minimum education required, training, and experience needed for building inspectors, and develop the training protocol
Imposing Fines	Procedures for imposing fines

In addition, a formalised list of building inspections required according to Building Classification and site conditions should be created and apply to all locations in Fiji. Examples of building inspection types are shown in Figure 5.2 below.

Table 5.2 Proposed building inspection schedule for large buildings

Inspection Type	Scope
Pre-construction	Once the builder has identified boundaries and erected profiles, an inspection is necessary to confirm the building is sited in accordance with the approved plans
Foundation	Prior to concrete foundation being poured to confirm depth of footings, reinforcement and location
Underfloor Services	To inspect location and sizing of waste pipes and other services to be installed within a concrete floor of under a timber floor
Pre-floor	To inspect reinforcing and damp proofing before concrete floor is poured or bracing and subfloor framing for a timber structure , can be combined with the underfloor inspection
Pre-cladding	Foundation-to-roof bracing, lintels, fixing to floor structure, building wrap, insulation
Pre-line	Electrical installation, pipework
Roof framing	Inspect fastening, bracing of roof material
Drainage	Septic system inspection before filling in trenches and covering pipework
Final Inspection	Plumbing, building and drainage

Self-Reporting of Building Inspections Procedures

.8

A self-reporting system for building inspections could be used for low-risk buildings which would speed up the inspection process leaving more resources for high-risk buildings. This approach is used in New Zealand by BRANZ (Building Research Association of New Zealand) who created a purpose-built app called Artisan. The system is to be used by known high quality builders who have a proven track record of complying with the building code.

In Fiji, low-risk buildings (residential and out-buildings) are also considered to be high-risk as improperly installed electrical wiring in these buildings is the leading cause of fire. A self-reporting system in Fiji would have to ensure that inspections for items that are considered to be high risk are still carried out, while other inspections for low-risk buildings could potentially be self-reporting.

Table 5.3 Self-reporting Advantages and Disadvantages

Advantages	Disadvantages
Easier sharing of information between expertise and departments	Requires training of staff and public
Public do not need to go into an office and lodge information remotely	There may be resistance to uptake
Less reliance on paper documentation potential for losing them	May require additional and/or updated it equipment
More complete records that are stored in a logical manner providing data and insights	For online solutions, coverage of the mobile network may not be sufficient
Easier retracing of steps for quality control and troubleshooting	
Mobile data costs in Fiji are among the lowest in the world	

Certificate of Completion Procedures

.9

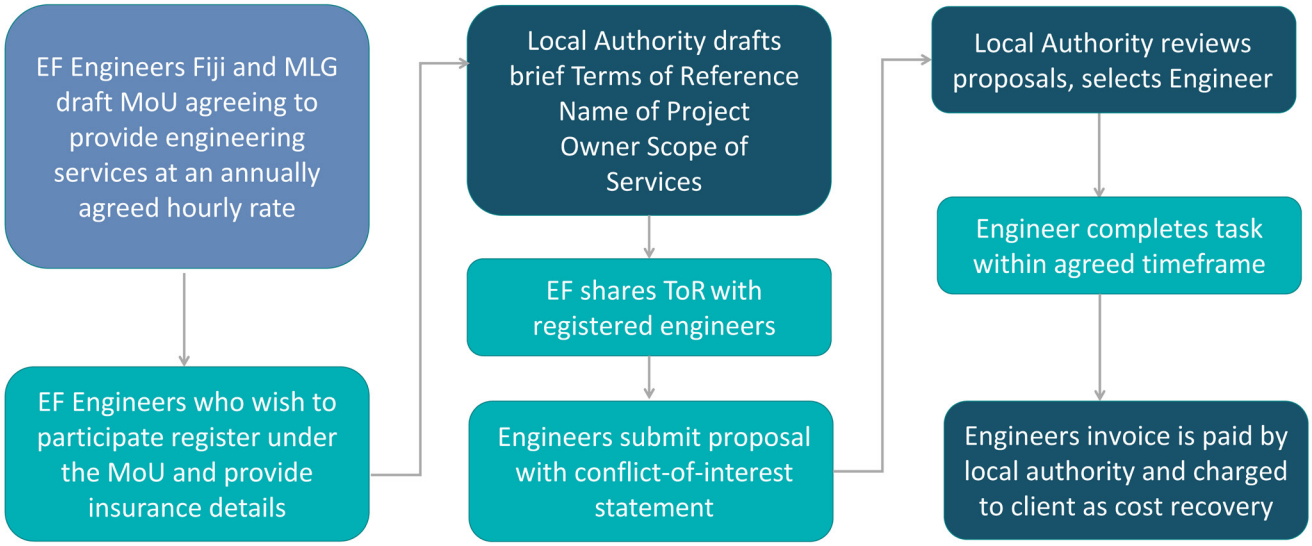
Standard procedures for when, by whom, and how a Certificate of Completion is issued should be developed and standardized across Fiji. Similar to building permits and building inspections, an online system to digitally record the data can be used for tracking and policy decisions.

Peer Review of Building Permits

.10

To address the lack of qualified individuals to review and recommend approval of a building permit application, Fiji should create a peer review process for building permit approval whereby qualified professionals in the private sector are hired on a project-by-project basis to review building permit applications and provide an opinion on compliance with recommendations on measures needed to meet FNBC standards. The peer review of complex development and building applications is a standardised process used in many parts of the world. An example of the steps involved is shown below:

Figure 5.3 Technical Assistance for Building Permits



C Strengthen POLICY

A selection of new policies and policy updates have been identified as essential to ensure the successful implementation of FNBC standards. We recommend that the following initiatives be undertaken to ensure the continued success of the implementation of FNBC standards.

.1 National Fire Safety Manual

Although the Fire Protection section of the FNBC update is sufficiently detailed and presented, there are additional procedures for fire safety, best practices and acceptable solutions that could provide further direction to the building industry. Many countries have a National Fire Safety Manual in addition to a building code to provide details on firefighting equipment, installation and testing of equipment, firefighting procedures and operations of fire control centres and substations. The NFA has indicated they would like to have such a manual, particularly as Fiji transitions into more high rises and complex buildings.

.2 Heritage Conservation Policy

The Heritage Bill 2021 enables the Fiji Heritage Council to deem a building as a potential world heritage site and instructs the Director of Town and Country Planning to apply a grading to the property which will become part of the Town and Country Planning Scheme. At the development permission stage, the Fiji Heritage Council will approve of preservation requirements and limitations to be placed on the heritage site or building that could significantly increase the cost of development or reduce the scope of a proposed development. A Heritage Conservation Policy could provide details on how to properly preserve heritage architectural features, and it would serve as a reference document for building permit reviewers to ensure that preservation techniques are adequately detailed.

.3 Cyclone Certificate / Insurance Policy

Although not part of the building permit approval process, a Cyclone Certificate issued by a certified member of Engineers Fiji is required by the insurance industry to guarantee that a building is designed to be resilient to cyclonic wind speeds, thereby complying with Structural standards in the FNBC. Due to recent changes where some insurance companies are now offering a gradated system of insurance that is not dependent on a Cyclone Certificate (see page 20 Insurance Limitations) there are more incentives for builders and residents to build according to FNBC standards. To facilitate the incentive, a procedures manual should be prepared to highlight the FNBC standards that must be complied with to attain different levels of insurance. This will assist designers in decision-making at the outset of the project that will ultimately affect construction budgets and affordability. It will also clarify procedures for satisfying requirements for cyclone certification and will apply to all insurance companies rather than a select few.

.4 Building Manual for Informal Settlement Upgrades

A Building Manual to improve buildings in existing informal settlements could specify standards for retrofit of existing homes for wind load, fastening, wiring, servicing and green building. To incentivise residents to upgrade buildings or build correctly the first time, the Government of Fiji should offer a cash-back program that provides financial reward after upgrades are inspected and deemed acceptable. The document should be relative to other initiatives such as the Informal Settlement Upgrade Formalisation Programme (ISUP) which aims to offer 99-year leases for eligible residents.

.5 Demolition Policy and Procedures

A policy document that outlines procedures for demolition is necessary to provide sufficient detail for a full understanding of the step-by-step procedures. Although some standards will be in the FNBC, the Building Act and the Building Regulations, it is still advisable to have a more detailed description of the process, roles, required activities, procedures, time frames, and more.

D Strengthen AWARENESS

Many stakeholders identified that lack of awareness of the FNBC, the standards within the Code, and when, where and how it should be applied was evident across Fiji. Strengthening awareness of the FNBC and other building-related resources is an important strategy that will increase compliance, safety and climate resilience. In addition to the recommendations below, an Awareness and Promotions Strategy is being prepared that will outline more strategies in greater detail.

.1 Building Code Webpage

A webpage dedicated to the Building Code should become part of the MPWT website. Links to information sheets, related documents, training events, and other newsworthy items should be part of it. Instructions on how to submit a building permit application, the permit review process, building inspections and Certificate of Completion will assist building industry and residents. In addition, an information sheet that outlines the importance of complying with the Building Code to ensure health and safety of occupants will be an important tool for raising awareness.

.2 Online Access to FNBC, Guidelines and Standards

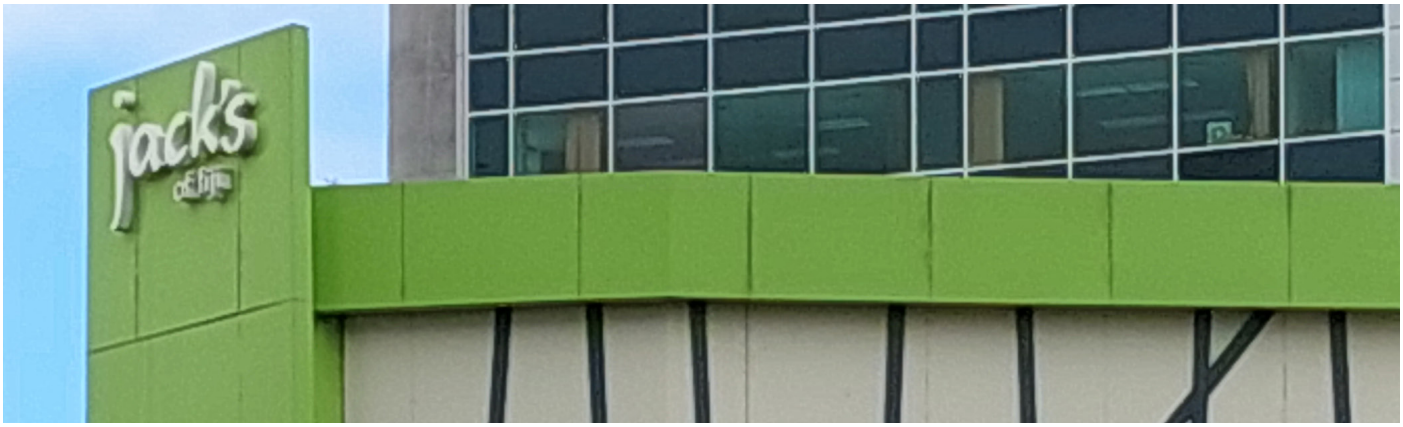
To ensure Fiji residents and building industry members have access to current standards, the FNBC and related guidelines and policy standards should be available online in digital format. The Government of Fiji should also pursue an arrangement with the Australian Building Code Board and the Australian Standards Association to permit a purchase of relevant standards and have them available for online viewing (not downloading). To secure autonomy of the standards, a number of restricted access controls could be used such as requiring a login and password to access the standards, restricting the ability to print, copy or printscreen. The Government of Fiji should purchase the updated standards as they become available and continually update them on the government website.

.3 FNBC User Manual

A User Manual for a building code is an important information tool used by countries worldwide and is recommended to be prepared for Fiji and be available online. The User Manual can address the most critical and complex safety and compliance issues encountered in Fiji such as: appropriate fastening, foundations, electrical wiring and new green building techniques such as natural ventilation, cool roofs, window shading, choice of building materials and insulation. It could also be a comprehensive document and address all standards in the FNBC.

.4 Green Building Acceptable Solutions

A design manual illustrating acceptable solutions for green building techniques would assist the building industry to implement this new part of the Building Code. This could be applied according to building classifications with more complex solutions offered for larger buildings and more easily achieved solutions for residential.



E Strengthen CAPACITY

A key component to enhance compliance and enforcement of the FNBC is to strengthen human resources.

.1 Certify Building Reviewers and Inspectors

Effective training and continued professional development for building inspectors and permit reviewer is essential for compliance and enforcement.

Due to limited human resources in Fiji, plan examiner and building inspector qualifications should be on a gradated scale ranging from qualifications needed for low-risk to high-risk building types. Considering most buildings constructed in Fiji are single storey residential, the majority of inspectors and permit reviewers could likely be accommodated by vocationally qualified staff such as draftsmen and trade qualified builders, plumbers and electricians. However, high-risk buildings such as public works buildings and high rises would require plan examiners and building inspectors with a higher degree of qualifications and experience.

To facilitate certification of building reviewers and inspectors, expansion of the programs at Fiji's educational institutes could fill the gap and ensure that inspectors are trained for building types and circumstances that are specific to Fiji. Currently there are no Building Examiner or Building Inspector courses at any of the post-secondary education facilities in Fiji. We strongly recommend that such a certification program for building permit reviewers and building inspectors be developed / reinstated at one of the educational institutes listed below.

A further option is to have private sector building inspectors similar to the system in Australia, which would require a regulatory process to be approved.

.2 University of the South Pacific

The University of South Pacific offers a Bachelor of Engineering for civil, electrical and mechanical engineering within the School of Information Technology, Engineering, Mathematics and Physics. The College of Continuing Vocational Education and Training (CVET) offers upgrade courses to individuals already working in the industry. A Certification program for building permit examiners and building inspectors could be integrated within either of these two organizations.

.3 Fiji National University

The National Training and Productivity Centre – Department of Construction currently offers the following short courses related to building:

- Plumbing & Sheet Metal Workplace Safety
- Cabinet Making & Joinery Modules
- Carpentry Trade Modules

The School of Building and Civil Engineering offers the following programs:

- Bachelor of Urban & Regional Planning (Honours)
- Bachelor of Engineering (Civil) with Honours (Quota Based)
- Diploma in Architectural Drafting (Level 6)
- Diploma in Construction (Level 6)

A Certification program for building permit examiners and building inspectors could potentially be developed with a combination of courses within the above disciplines. Fiji National University is also the authority responsible for skills certification under the National Trade Testing Scheme which operates under the Trade Testing Regulations (1976) of the Productivity Authority Act. The three levels of testing for trades skills are:

- Class III Assistant Tradesman Level
- Class II Qualified Tradesman Level
- Class I Supervisor Level

These levels apply to carpentry, cabinet making, plumbing and wet trades.

Pacific Polytech

.4

The Pacific Polytech, Professional Development & Short Courses provides vocational training for the Basic Residential Construction Trades. The courses are provided in many aspects of residential construction such as carpentry, tiling, painting and are purely short courses aimed at upskilling rather than providing a full vocational qualification. These courses would be useful for tradespeople wanting to upgrade their skills according to new technology, methods and materials. They could also provide the basis for a certification program for building permit examiners and building inspectors for residential buildings.

Australia Pacific Training Coalition

.5

The ATPC has several campuses across the Pacific and have long-standing vocational training in building plumbing, electrical and mechanical. The Fiji campus currently provides certification up to level three for carpentry and tiling and level two for construction and plumbing. A certification program for building permit reviewers and building inspectors could be developed and executed in a similar fashion as the following:

- CPC20120 Certificate II in Construction – Trade Assistant
- 11054NAT Certificate II in Plumbing Services – TAFE Queensland Qualified
- CPC31320 – Certificate III in Wall and Floor Tiling – TAFE Queensland Qualified
- CPC30220 – Certificate III in Carpentry – TAFE Queensland Qualified

Montfort Boys' Town

.6

Montfort Boys' Town is a valuable resource for youth in Fiji, providing technical training and helping young people to develop the skills and knowledge they need to be productive and successful members of society. The 3-year Building Trade Courses allow students to sit the - FNU CLASS III Trade Test end of third year to enable them to become certified tradespeople. Currently Montfort Boys' Town is only open to boys, in order to be more inclusive, the admission of girls should be expedited and supported by Government.

Registered Plumber Certification

.7

The Water Authority of Fiji (WAF) is supportive of the Fijian government's decision to require licensing for plumbers, and that the Fiji National University (FNU) and the National Trade Testing Scheme (NTPC) will play a role in providing training and certification for aspiring plumbers. Requiring licensing for plumbers can help to ensure that individuals who are working in this field have the necessary knowledge, skills, and credentials to carry out their work safely and effectively.

Training and Professional Development

.8

All building industry organisations, including government ministries and local authorities, agencies such as NFA, WAF and EFL, and professional organisations such as CIC, FAA, EF, FNBA and FBDA should conduct training seminars, workshops, and the like that focus on the FNBC and other related standards and guidelines. By providing ongoing training and professional development, building industry organizations can assist the building industry and the public in awareness of the FNBC, ensure that members have the knowledge and skills to effectively enforce the FNBC and ensure that buildings are safe and compliant FNBC standards.

Building Industry Website Upgrades

The Construction Industry Council (CIC) was recently formulated (2019) as an organization with members from all building industry organizations, and it effectively lists the member organizations and provides workshops and conferences aimed to span a number of disciplines. The only organization listed in Table 5.4 that is not part of CIC is the Fiji Planners Association.

There are varying degrees of access, completeness and comprehensiveness for the websites of the other organizations listed in Table 5.6. Some, like the Fiji Planners Association, are only available as a facebook page, while others, such as Fiji Association of Architects, are difficult to find, if they even exist.

While some are already fully functional and informative, other building industry organizations' websites should be upgraded to include at a minimum:

- Purpose of the organization
- Description of the role that the organization has within the construction process
- Description of how the organization uses the FNBC and importance of complying
- List of divisions within the organization
- Contact information for all members available to the public

Improving the websites of the building organizations as suggested above will greatly assist in increasing awareness and importance of the FNBC, and can be an advertising tool for the member organizations.

Table 5.4 Certification Requirements for Professional Organisations in Fiji

Professional Organization	Certification Required
Construction Industry Council (CIC)	no
Engineers Fiji (EF)	yes
Fiji Association of Architects (FAA)	
Fiji Building Designers Association (FBDA)	no
Fiji Institute of Quantity Surveyors (FIQS)	
Fiji Institute of Surveyors (FIS)	yes
Fiji Master Builders Association (FMBA)	
Fiji Planners Association (FPA)	no

.9

Online Registration of Trades People

Registration of trade workers is not well-organised or advertised, and difficult for the public to access. The National Trades Testing Scheme is already in existence and should be brought online so it can be shared with Local Authorities and agencies. Trades people registered under the scheme could have a number allocated to their license which can be accessed online so that there is a mechanism for tracking and confirming the qualifications of individuals that is readily accessible. The Trade Testing Regulations could further develop rules around registration and disciplinary measures so that it can operate similar to other professional organisations in Fiji that require registration and/or certification.. This also gives clients and consumers a protocol for lodging complaints. Online registration of building trade members could be cross-referenced with the Fiji Master Builders Association database that lists companies, rather than individuals, as its members.

10

Enhancing information available to building industry members to design buildings that will comply with the FNBC is an important activity that will assist all members of the building industry.

.1 LiDAR / Flood Mapping

Fiji is vulnerable to many hazards yet currently lacks essential planning tools to safeguard the public. An essential tool is LiDAR mapping or laser imaging, detection, and ranging. LiDAR mapping creates a 3D image of the ground surface including tree cover that can be used to assess topographic and hydrological risks of a building site, including flooding, storm surge, earthquakes and landslips. Engineers and officials can designate areas that are not suitable for construction or require additional structural features for stability in buildings. Building industry members can use LiDAR mapping to design and build specifically to mitigate risks or relocate away from the risk. LiDAR mapping is also useful for disaster management, hazard modelling and analysis of risk informed urban planning and climate resilience.

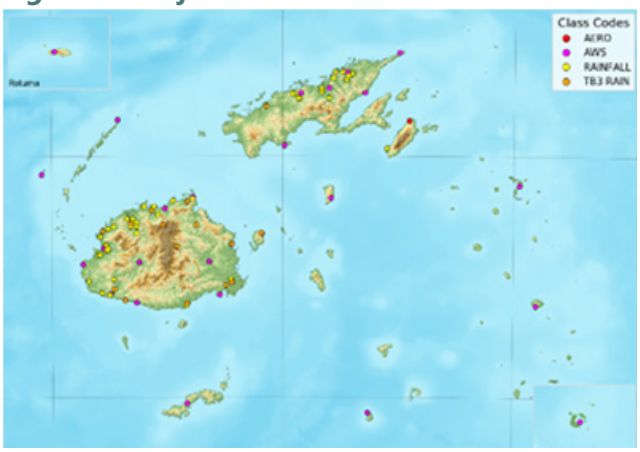
.2 Rainfall Data

With the escalation of climate change, flooding and storm surge have increased in frequency and intensity. Rainfall data can be used to identify areas prone to flooding, which in turn they can be used Local Authorities and DTCP to develop policies. Tide gauge data can also be overlaid on coastal storm surge zones to determine either minimum freeboard or no build zones which will assist in safely siting and constructing buildings in coastal zones and areas prone to flooding.

.3 Terrain / Wind Zone Mapping

Using data generated from weather stations across Fiji and LiDAR data, a map can be generated that identifies areas where high winds are more prevalent. Wind zone mapping will inform designers if additional design features to reinforce buildings against high winds are necessary. It can also be used in the application of the wind speed calculations made by structural engineers.

Figure 5.4 Fiji Climate Station Class Codes



.4 Online Timber Sizing Software

Most designers and builders use online wood member sizing software to determine appropriate sizing, spacing and spans, although a few individuals may still do manual calculations. In any event, the MPWT website for the FNBC should contain a link to a website with an acceptable wood member sizing software and provide explanation on how to use it.

.5 Property Identification

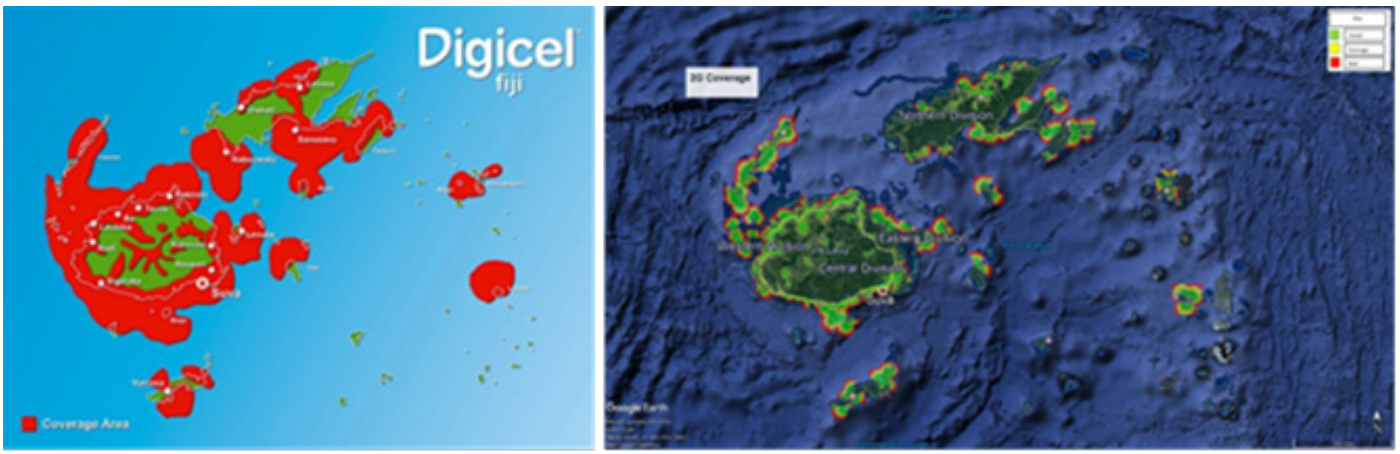
In built-up metropolitan areas such as Suva and Nadi, properties have been given street addresses, however beyond the urban limits and on ITaukei land street addresses and land parcels are not recorded. Property identification is needed for IT solutions to capture location information, find a site on google maps, and to use in legal land transactions and building permit applications. If LiDAR mapping (see previous page) is prepared for Fiji, the associated GPS coordinates can be used as a property identifier. Other nation-wide land titling systems could be pursued for high-risk areas. Another option is to use the GPS coordinates attached to service providers' equipment such as electricity or water meters, and power poles. As this data lies with the approval agencies, an agreement could be made for the agency to provide coordinates when street address data is not available.

Mobile Phone Coverage Expansion

.6

A key prerequisite to having building permit application reviews and building inspections recorded online and the system digitised is to ensure there is sufficient mobile phone coverage throughout the islands for building inspectors in remote areas and to provide access to all residents in Fiji to the online building permit approval system. Its is expected that the mobile network with the least expensive data would be used for onsite visits and fixed fibre optic which would be used in urban areas. The main mobile phone providers are Digicel and Vodafone. Coverage is approximately 75% in Fiji and does not reach some of the outer islands or the inland highlands on Vanua Levu and Viti Levu. Both providers have significant "black spots' in inland Viti Levu, the west and east extremes of Vanua Levu and the smaller remote islands. Collaboration with service providers to extend service to remote areas would increase online access to the FNBC and related information.

Figure 5.5 Fiji Mobile Phone Coverage



Information Sheets

.7

A series of information sheets on relevant topics to make it easier for people to use and comply with the FNBC would be a valuable resource, and could include:

- How to Use the Fiji Building Code and Related Standards
- Flood and Termite Protection
- Requirements for Converting a Building to a Hotel / Accommodations
- Building for Energy Efficiency
- Requirements for Traditional Buildings
- Cyclone-resistant Fastenings to Upgrade Your Home
- Fire-Resistant Building Material for Building Class 1 to 10

Administrative and Building Data and Analysis

.8

Part of the on-line system for building permit applications, site inspections and certificates of occupancy, will be the generation of data that can be used to strengthen and support long-range planning to improve the efficiency of the building permit approval system. Understanding the number and type of building permit applications in the urban and rural areas of Fiji can help government departments and agencies such as NFA, EFL and WAF to generate capacity projections for staffing and resources to serve the community. Problem areas and hot spots can be identified so that appropriate action can be taken to mitigate. Data from the online building permit applications, building inspections and occupancy certificates should be the primary data that will be analyzed for future planning and policy initiatives.

G Strengthen QUALITY

The use of substandard or unregulated building materials, products and equipment can lead to a number of health, safety and environmental concerns. Procedures for assessing, regulating and rejecting substandard building materials will result in an increase in quality and resilience of buildings.

.1 **Quality Control Lists**	As the lead ministry, MPWT should prepare lists of building materials (timber, steel, cement) that are acceptable to be used, as well a list of products (tiles, roofing sheets) and equipment (fire hose reels, air conditioners). A list of unacceptable materials should also be established. The lists should be updated annually to account for new additions, and should be available on the FNBC website. If a material is not on the list, the Local Authority can assess whether it meets FNBC standards for strength, safety and climate resilience. Coordination with MTCS will be critical. Annual updates are essential.
.2 **Green Building Material Lists**	Sustainable building products, such as bamboo, are constantly being updated, an a list of sustainable building materials would assist designers to know instantly what would be acceptable. Similar to the above, it should also be updated annually.
.3 **Pre-Construction Inspection Procedures**	Currently, inspection of building materials by building inspectors is not typically done with the result being that building walls, roofs, foundations, floors, etc. are being constructed with substandard material. When developing procedures for building permits, it will be important to have inspections of materials prior to installation so that substitutions can be made.,
.4 **CodeMark / Other Plan Review Software**	A building product certification system is high recommended to ensure that products and equipment are compliant with the FNBC. One example is CodeMark that was developed jointly by the Ministry of Business, Innovation and Employment (MBIE) and the Australian Building Codes Board (ABCB) to provide a means for demonstrating the compliance of building products with the relevant building codes and standards in New Zealand and Australia. CodeMark certification is issued by independent certification bodies that have been accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ). CodeMark certificates are only valid in the country in which they are issued, so a product that is certified under the CodeMark scheme in New Zealand would not automatically be recognized as compliant in Australia, and vice versa. CodeMark is appropriate for Fiji as it is based on Australian and New Zealand building code standards which are utilized in the FNBC update, so we can be sure that certification in Fiji would be fit for purpose. CodeMark would require the assessment of local products such as timber and would involve visiting timber processing plants to ensure calibration of stress grade equipment for correct dimensions and acceptable methods of timber treatment. On site, building inspectors can use moisture meters to test water content prior to cladding. Concrete can be compression tested. Local company ENTEC LIMITED have a wide range of tests available for concrete asphalt and aggregates, their services can be included as a requirement in a building permit. It is unclear if there are welding inspection facilities available or whether they are able to x-ray welds for quality.
.5 **Regulate Importation**	MPWT should collaborate with the Ministry of Trade to develop procedures for regulating substandard building materials, products and equipment that are imported to Fiji and if used would result in health and safety problems. Collaboration with agencies such as NFA, WAF and EFL will be essential.

H Strengthen FUNDING

The following activities will ensure that compliance and enforcement of the FNBC will be able to be implemented. Further financial strategies will need to be generated annually to ensure that recommendations in this report can be effectively administered.

Update Fee Structure

The monitoring and enforcement of construction activities in Fiji incurs significant operation costs in the form of salaries, transportation, and administration. The current fee structure for development permission and building permit applications are wholly inadequate to cover such significant costs.

A fee structure regularly updated to align with current construction methods and typologies will ensure Local Authorities and agencies are well-funded to perform their duties in enforcing the Building Code and able to hire more and qualified staff. A comparison to building permit fees charged in other Pacific nations, New Zealand, and Australia shows that Fiji's fees are much lower, see Table 5.9 below.

A revised fee structure should be able to:

- Increase logically according to the cost and complexity of the proposed development
- Be updated regularly to allow for increases in construction costs and general inflation. For example, some states in Australia use "fee units" (similar to penalty units) that applies a blanket fee update via government gazette
- Exempt government projects and post-disaster construction
- Allow for additional fees for:
    - Specialised inspections
    - Peer review
    - Follow up inspections for remedial work
    - Extension of Permit validity
    - Substantial changes to proposed design
    - Printing and scanning costs
    - Additional travel costs for remote areas
    - Additional fees for a fast-track process
    - Cost recovery if fees do not cover the cost of review and inspections
- Be relative to the financial means of the applicant, with lower costs to low-income families in rural areas on iTaukei lands

Table 5.5 Approximate Building Permit Fees in Pacific Countries

Country	Approximate Permit Fee
Fiji	$3,388 FJD for all building types
Samoa	$20,500 FJD Commercial $11,500 FJD Non-commercial
New Zealand	$14,00 FJD All building types
Australia	$4,400 FJD for Class 1 or 10 $20,500 FJD for Class 2 - 9

.1

Government Grant Programs

.2

Fiji has a number of government grant programs to assist low income families to have a home to live in. For example, MOH offers the First Home Ownership Initiative to provide affordable and quality housing for all Fijians, resulting in increasing home ownership across the country for low and middle-income earners. The funding is contingent on the applicant first receiving an offer of a home loan from one of the major Fiji banks funded by a regular income stream. Unfortunately, this excludes many low-income rural families from eligibility. However, this initiative is ideal for families living in urban and peri-urban areas who would be able to take advantage of the additional funds to build a more resilient and sustainable home than they would otherwise have been able to afford.

Table 5.6 Funding to Build Resilient and Sustainable Homes

Income Category	Funding for Construction of first home	Funding for Purchase of First Home
Annual Household income < $50,000	$30,000	$15,000
Annual Household income $50,000 to $100,000	$20,000	$5,000

Other government grant programs currently available include:

1. First Land Purchase Programme

Introduced in 2018 / 2019 financial year, Fijians with an annual household income of $50,000 or less qualify for this assistance to purchase their first land. The maximum grant assistance is $10,000 per household.

2. Housing Assistance to Fire Victims

Introduced in 2015, under our Fire Victims Assistance programme to assist low/ middle income earners to rebuild their homes destroyed by fire, households with a total income of $50,000 or below.

3. Housing Assistance for Persons Living with Special Needs Grant Programme

Housing Assistance for Persons with Special Needs is geared toward increasing housing accessibility for people with disabilities. This retrofit program helps low and middle income Fijians with various disabilities in upgrading their house/ facilities to make them more accessible to their special needs.

All of these programs should be re-framed to ensure that complying with FNBC standards is a requirement of receiving the grant, and be supplemented by additional funds for use of sustainable, green building techniques.

Green Building Cost Analysis

.3

It is well documented that Green Building Practices in the developed world have increased construction costs but have greatly contributed to reduced energy demand, water use reduction and construction waste to name a few. Whilst the initial outlay can be sightly more, the financial benefits are almost immediate with homeowners having reduced energy costs due to renewable energy, energy efficient design and water management. These savings very quickly offset additional cost for sustainable/green building products and technology. Despite Fiji's remoteness from the main producers of green building products (which may push costs up), builders should still be able to integrate green systems into their designs which are not only climate resilient but reduce the demand on non renewable resources such as electricity generated by diesel and treated reticulated water. A cost analysis of green building techniques and products should be conducted so that the building industry and residents can analyse the cost-benefit of using a particular technique to make an informed decision on the building design. The results could be posted online on the FNBC webpage.

Government Rebate Programs

.4

A financial rebate to incentivise FNBC code compliance for green building techniques is a well-known strategy used in many countries. Examples of a green building rebate program include:

- **Property or income tax relief**
- **Rebate of building permit application fee**
- **Rebate or partial cost recovery of energy efficient appliances, air-conditioners, water heating, lighting, air-sealing, insulation, efficient windows and doors, solar water heaters**
- **Rebate or partial cost recovery of water efficiency devices**
- **Rebate for installation of solar PV system or other renewable energy**

Australia operates the Green Building Fund which offers significant grants from $50,000 to $500,000 to retro-fit existing commercial, office, hotels or shopping centres for becoming more energy efficient and reducing greenhouse gas emissions. A study that investigates cost-effectiveness of the different techniques should be undertaken to determine the best rebate programs for Fiji.

IFC Green Bond Program

.5

As part of their commitment to sustainable economies in the developing world the International Finance Corporation (a subsidiary of the World Bank) was the first in the South Pacific to issue green bonds for public tender. Fiji will need investments of more than 9.3 billion Fijian dollars (over $4 billion) in the next ten years to reduce its vulnerability to climate change, according to a recent report from the Government of Fiji and the World Bank. This is urgent because citizens already feel the impact of global warming: more than 25,000 Fijians are pushed into poverty every year due to cyclones and floods, and experts predict this number will rise to over 32,000 by 2050.

The Green Bond Program could be used to fund any of the green building techniques associated with Fiji. Research for the Energy Efficiency section of the FNBC update has identified that the green building techniques that will have the greatest energy savings for homes are the use of a solar water heater, and a solar PV rooftop system.

The green bond program could potentially be used to provide funding. Collaboration with IFC is highly recommended to provide funding for recommended tasks in the Action Plan and/or to tap into IFCs available funding programs.

Agency Rebate Programs

.6

Agencies such as EFL and WAF can offer financial incentives to encourage residents to use sustainable products and equipment. For example, EFL has authorized Sunergise, a solar energy provider, to offer a free solar PV rooftop system, including delivery and installation, for building owners who must then sign a 10-year agreement to purchase solar energy from the system, but at a much reduced rate than a regular electrical supply. Rebate programs for solar water heaters and solar lighting could also be similarly incentivised.

Benefactor Funding

.7

A number of international organisations that provide financial assistance for sustainable building should be approached to see if they could potentially fund low-income sustainable and resilient housing. For example, the Leonardo DiCaprio Foundation and Government of Fiji created the Fiji Rural Electrification Fund (FREF) to assist rural communities with community solar power generation in the villages of Vio and Nacula in Yasawa. The program required villagers to pay for the installation, but all would receive free energy after that. Other programs are available, particularly for sustainable building construction. All potential options should be investigated and actions taken so that the funding is available for Fiji.

I Strengthen COMPLIANCE

Compliance with a building code or regulations can be greatly enhanced by having appropriate punitive measures that are easy to enact. The following techniques seek to enhance the current FNBC enforcement tools that have extremely low fines and a difficult approval/appeal process.

.1 Increase Fines and Punitive Measures

The existing fine of $200 FJD per occurrence needs to be increased so that it is of an amount that would be an actual deterrent for potential offenders. A study of fine amounts for violating a building code in other countries should be conducted, with recommendations to update the current amount accordingly. For example, the Building Act, 1984, in Great Britain establishes that a breach of the building regulations is a criminal offence and that a person can be fined up to the equivalent of $13,500 FJD, and a daily amount if the default continues after conviction. In Western Australia, penalties for breaches of the Building Act range from $35,000 FJD for a first offence and up to $150,000 FJD for a third offence and imprisonment. The Regulation of Building Permits Act 2017 in Fiji which establishes the Building Permits Evaluation Committee, has a fine of $20,000 FJD and a maximum prison term of 5 years for breach of the Act.

.2 Council-Approved Fine Increases

Fines need to be updated regularly to respond to changes in inflation. For this reason, it would be advantageous to set fines by way of a Council-approved policy, rather than having the amount set in the Building Act or the Building Regulations. The Council Approved policy could be updated annually, bi-annually or every five years without a long and complicated approval process. The procedure for this should be detailed in the Building Regulations.

.3 Streamline Fine Process

The current procedure for imposing a fine for a breach of the Act is that after a building inspector issues a fine it must be approved by the court, which can take months or years to occur. To streamline the process, one or a combination of the following techniques could be used:

- Establish the Building Committee as the primary governing body for decisions on fines and offenses … and a court of law as a final decision-making body for any appeals to decisions made by the Building Committee
- Establish a tiered system whereby lower fine amounts would be instantly payable unless appealed to the Building Permit Committee for a decision, and all large fines would be decided by the Building Permit Committee
- Establish a procedure that a stop-work order be imposed if the matter involves a breach of the Code causing a health and/or safety concern

.4 On-the-Spot Fines

On-the-spot fines can be an effective way for building inspectors to enforce the building code and address minor infringements without having to go through the time-consuming and resource-intensive process of building a case for more serious violations. On-the-spot fines can serve as a deterrent for builders and developers who might otherwise be tempted to cut corners or ignore the standards in the FNBC as they can be issued quickly and without the need for a lengthy legal process. However, it is important to ensure that on-the-spot fines are used appropriately and in accordance with the relevant laws and regulations. In some cases, more serious violations may require a more formal legal process, such as a hearing or trial, in order to determine the appropriate course of action. Procedures and limitations for On the Spot Fines should be developed so that they are not imposed arbitrarily, and should be approved by Council.

J Strengthen ENFORCEMENT

Enforcement of the FNBC will depend on a combination of many factors. Some that are not mentioned in other sections include the following:

.1 Approval Agency Coordination

Approval agencies that are involved in the assessment and inspection of building developments are often occupied performing their core functions of delivering services to the community and the task of approving building permit applications is an additional undertaking that often gets put on the back burner when resources are limited. To compel approval agencies to ensure dedicated resources are allocated to the building permit process requires not only legal tools such as the Building Act and Building Regulations but also budget allocation tied to key performance indicators. With the digitization of the building permit review process, responses from approval agencies can be recoded online, and those that have not responded will be easy to identify and track. A monitoring system to track approval agency contributions should be developed, including methods to send automatic reminders to approval agencies who have yet to respond.

.2 Building Permit Assessment Procedure

A well-developed Building Permit Assessment policy that specifies clear paths of communication, procedures on how to respond, timelines for response and an accessible documentation trail will make the process faster and less arduous for approval agencies. The policy should involve an algorithm that can identify simple projects to be processed in house (at Local Authorities) with just a request for endorsement sent to the approval agency, and those that require more agencies to be involved in the review process.

Processing of times and allowances for Local Authorities to engage outside expertise should the approval agency not respond within the time allowance should be established. Under the new building regulations this needs to be refined to allow for the varying scales of building developments and a pre assessment done before being passed to approval agencies.

A comprehensive online application that can be utilized by the council and approval agencies should be initiated. It will ensure consistency, no loss of information and clear lines of communication are implemented.

.3 List of Exemptions

A list of buildings that are exempt from complying with the FNBC should be included in the Building Regulations as a schedule to clarify this issue which is often debated. Exempt buildings should be assessed on the level of risk to human life and environment and not on location or land tenure, with the largest risks being from structural collapse under dead loads (the weight of the building itself), live loads (earthquake, cyclone, flash flood, occupation) and flying debris during high winds. Traditional, indigenous buildings used for domestic purposes are typically exempt from a building code since they involve materials and fastening methods that are not conducive with modern engineering practices. If a traditional building uses a non-traditional fastener or material, it would be subject to a building permit and the standards in the FNBC.

.4 Large-Scale Development Review Procedures

Occasionally, a Local Authority will request assistance from DBGA for large-scale development applications, however, there is no formal process to invoke this to happen. To ensure that all large-scale buildings have the expertise of DBGA in the plan review, site inspections and occupancy permit approval processes, a Council-approved policy or regulation should be prepared that lists the type, scale, complexity and associated risk of buildings that will automatically be referred to DBGA. The policy could also indicate the type of review that DBGA will perform based on the building characteristics.

6.0 IMPLEMENTATION

IMPLEMENTATION STRATEGY

- **Manage** - FNBC Implementation Team
- **Roles** - Division of Responsibilities
- **Funding** - Cost Overview
- **Staging** - Priorities
- **Review** - Monitoring

To implement the Action Plan, a coordinated effort between the Government of Fiji, agencies and building professionals is required to be able put into place the national strategies and recommended tasks.

The following Implementation recommendations address all aspects of the building permit process and suggest initiation, operational, and on-going tasks that will increase capacity for compliance and enforcement of the Building Code.

FNBC Implementation Team

Effective management will be the key to success for achieving the recommended tasks in the Action Plan. To this end, a Team of at least three professionals with experience in development approvals, construction, environment, and public administration should be hired to manage and oversee the successful implementation of the Action Plan. Key tasks of the FNBC Implementation Team include, but are not limited to:

- Oversee and manage ALL implementation tasks assigned to ministries, local authorities, agencies, educational institutes and the building industry, including scheduling, funding, coordination with other stakeholders
- Manage the awareness strategy by populating and updating the website dedicated to informing the public about matters related to the FNBC, prepare information sheets
- Investigate and obtain funding for low income families, green building incentives, supporting studies and mapping, and manage distribution to all stakeholders
- Be the key contact and assistant to the Building Committee regarding research, information gathering, scheduling, public awareness
- Host regular progress and coordination meetings between key ministries, agencies and stakeholders
- Respond to inquiries from ministries, local authorities, stakeholders and the public
- Oversee the creation of new policies, plans and procedures such as Rural Area-iTaukei building permit approval strategy
- Prepare for and oversee the 5-year update to the FNBC

A Terms of Reference for the FNBC Implementation Team should be prepared to list all assigned tasks in the 5-year Capacity Building and Training report.

A similar approach has been taken by the Ministry of the Economy for compliance and enforcement of standards in the Climate Change Act, 2021. A team of 6 individuals (CCD) is dedicated to the task of ensuring studies, awareness, and other implementation activities are completed.

Likewise, the FNBC Implementation Team will be the key group responsible for building capacity for compliance and enforcement of the FNBC.

Risk-Response Compliance and Enforcement Approach

A number of different approaches could be used to implement the compliant and enforcement tasks listed on the previous pages, including:

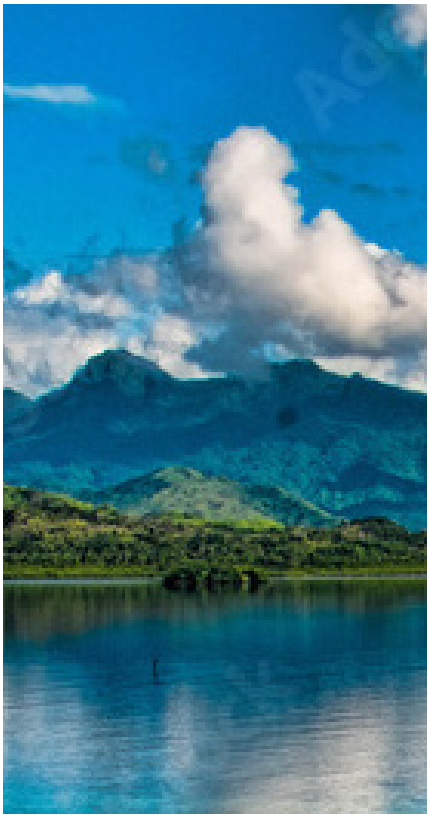
- An **equalized approach** whereby compliance and enforcement tasks are implemented for all Fiji residents and allotments equally
- A **gradated approach** whereby compliance and enforcement tasks are implemented for all Fiji residents and allotments according to rated criteria
- A **combined approach**, whereby some compliance and enforcement tasks are implemented equally and others according to rated criteria

Stakeholder consultation for the FNBC indicates that the vast majority prefer a gradated approach to compliance and enforcement based on size and scale of the building, capacity of the government staff processing the building permit application, and financial capability of the building owner.

While a universal implementation approach is often the best case solution, a gradated approach is the preferred option in Fiji for the following reasons:

Support for a Gradated Compliance Approach

- Fiji has a wide diversity of people with different cultural backgrounds, with some people preferring to live in cities and towns, and others in traditional indigenous villages
- Availability of services such as the NFA, WAF, and power providers differ between urban, peri-urban and rural areas, and rural areas and outer islands are mainly under-served
- Most government ministry offices are located in urban areas, which provides better access for urban residents and cuts down on plan processing time
- For many people, travel to rural areas and the outer islands for building inspections or consultations is cost prohibitive
- Urban areas have a much larger number of plan reviewers and building inspectors
- Plan reviewers and building inspectors in urban areas generally are better trained and more qualified
- A diversity of financial means exists across the country with the cost of housing being a struggle for many families



Degree of Compliance

A gradated approach to compliance and enforcement examines the risk-response of the compliance and enforcement tasks and assigns less stringent compliance requirements to more vulnerable people for simple, low-scale buildings, and more onerous compliance and enforcement requirements to financially capable people building large-scale buildings.

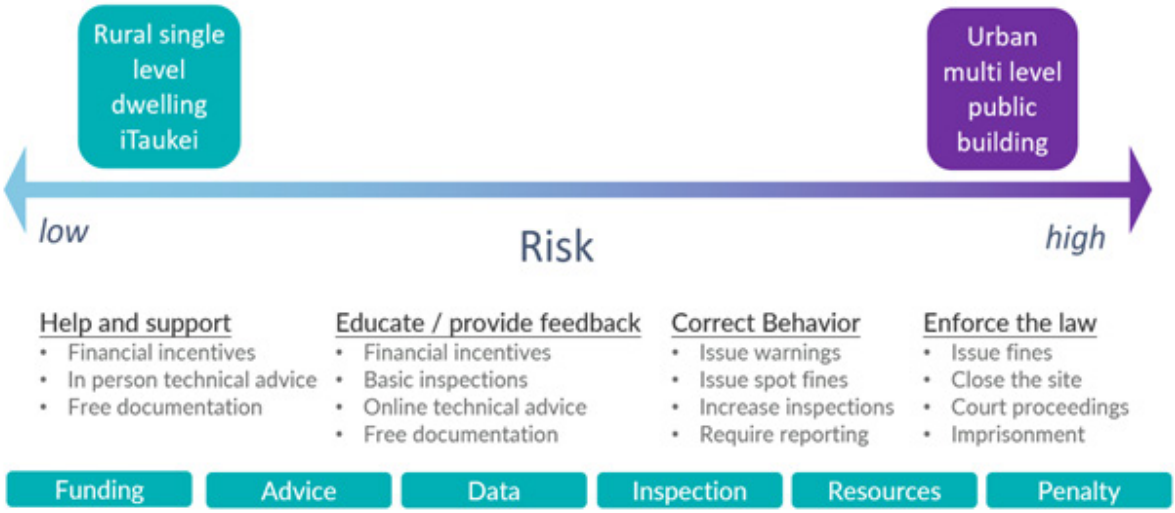
Applying a risk-response implementation strategy in a logical manner will ensure the most high-risk impact developments are closely regulated, and simultaneously ensures sufficient resources are available to provide education and guidance for smaller developments. For example a one storey dwelling in a rural area (regardless of land tenure) poses a significantly lower risk to a smaller group of people than a large multi level public building in an urban setting. Building failure in an urban setting puts at risk not only the users inside the building but also people in adjacent buildings with risks of fire spread greatly increased.

Available Resources

As with most government agencies, budgets are limited so resources for Building Code enforcement are also strained and are not distributed equally across the country. Availability of qualified plan reviewers and building inspectors is inconsistent in rural areas, and access to information varies. While some of these challenges will be alleviated when the building permit application process transitions to online, many families in rural areas and the outer islands do not use cellphones or the internet and would benefit from in-person collaboration.

Determining the risk to public safety and the environment for different building typologies, and a consideration of the geographic location, is key to assigning appropriate compliance actions proportional to the risk. For example, a high rise building in an urban area or an industrial building on the urban fringe that uses hazardous materials would have a high risk of injury to the public if the building fails, so the most aggressive punitive measures would apply such as issuing a large fine, closing the site until the non-compliance issue is resolved, court proceedings and imprisonment; but for a single level home in the rural area, appropriate actions for non-compliance would be to provide technical advise to correct the non-compliance issue, funding to assist with appropriate fastenings and materials, and other incentives.

Figure 6.1 Risk-Response Scale for High and Low Risk Building Types



The re-establishment of the Rural Local Authority and the associated FNBC building officer will be key components in a gradated risk-response strategy. The FNBC building officer will be a key resource person supplying help, support and information to residents and homeowners, and working with them to ensure that the standards in the Building Code are inadvertently implemented. The officer can assist residents with filling in a building permit application, ensuring the correct information is provided, advising on appropriate construction materials and methods, finding a contractor, apply for government grants and donor assistance, and reviewing applications and construction drawings for errors. All of these informal actions will ensure that FNBC standards are complied with. If a resident proceeds without assistance or acquiring a permit, the officer can do a building inspection, place a stop-work order, and require changes to be made to ensure compliance. The officer can assist with information on funding programs to upgrade the fasteners and building materials to comply with the FNBC, if necessary.

In urban and peri-urban areas, many residents and developers can afford to hire a building professional to prepare the building permit application and drawings, so the burden of proof and responsibility switches to the building professionals and the landowner. Building professionals (architects, engineers) are expected to know and understand the FNBC and how to comply with it. Large-scale buildings, whose failure could have dire consequences, would be subject to a stop-work order, substantial fines and potential imprisonment for non-compliance with the FNBC. The exception to this would be small-scale Class 1 buildings; if the owner can demonstrate financial hardship with complying to the building code, a number of funding sources should be available to assist with purchasing appropriate fasteners and building materials.

Detailed Risk-Response Investigative Study

A detailed study to investigate the intricacies of the many factors involved, from the risks associated with the failure of different building types, to available resources given the new legislative and institutional structure of the FNBC, to costs associated with complying with FNBC standards, should be given a high priority as it will become the framework for a risk-response implementation strategy.

To inform such a study, the two tables below provide a recommendation for a gradated scale of compliance and enforcement based on building type and building location.

URBAN AND PERI-URBAN AREAS

Table 6.1 Compliance and Enforcement Strategy per Building Type in Urban and Per-Urban Areas

Building Class	Financial Incentive for green building	On-site, in-person technical advice	Online technical advice	Warnings, on-the-spot fines, stop-work order	Inspections, reporting	Penalties: large fines, stop-work order, court, prison
Class 1					electrical	
Class 2						
Class 3						
Class 4						
Class 5						
Class 6						
Class 7						
Class 8						
Class 9						
Class 10						

RURAL AREAS AND ITAUKEI VILLAGES

Table 6.2 Compliance and Enforcement Strategy per Building Type in Rural Areas and iTaukei

Building Class	Financial Incentive for green building	On-site, Phone-in technical advice	Online technical advice	Warnings, on-the-spot fines, stop-work order	Inspections, reporting	Penalties: large fines, stop-work order, court, prison
Class 1						
Class 2						
Class 3						
Class 4						
Class 5						
Class 6						
Class 7						
Class 8						
Class 9						
Class 10						

Division of Tasks

Based on a series of stakeholder consultation meetings, a division of the recommended tasks in the Action Plan among ministries, agencies, organisations and educational institutes is presented here, with more detail and priority-setting provided in the 5-year Capacity Building and Training Report.

Table 6.3 Assignment of Recommended Tasks in the Action Plan (Overview)

Stake-holders	Tasks	Documents, Policies, Procedures
Ministry of Public Works, Meteorological Services and Transport (Lead)	• Oversee Council approval of the Building Act, Building Regulations, and the FNBC • FNBC website, online documents, awareness, prepare information sheets • Oversee activities of the Building Committee • Oversee implementation activities of agencies • Arrange for LiDAR Mapping, flood mapping • Prepare and update lists of acceptable building materials, products and equipment • Oversee risk-response approach study • Investigate funding opportunities • Administer 5-year update to FNBC	• Building Standards for Informal Settlements • Building Code Compliance App • Green Building Scoring, Acceptable Solutions and Cost Analysis • Heritage Conservation Architectural Guidelines • Policy for Issuance of Cyclone Certificates • FNBC User Manual • List of buildings exempt from FNBC • Policy for fines and punitive measures • Risk-Response Approach Study
Ministry of Housing and Ministry of Local Government	• Management of Local Authorities including data collection and statistics for annual number of building permit applications, occupancy permits, etc. • Building location and assigning street addresses • Streamline procedures to impose fines • Update fee structure for building permit applications and building inspections • Funding for green buildings on iTaukei lands • Standard Plans for homes	• Online building permit applications and approval software • Building Inspection app • Building Permit Assessment procedures and peer review process • Procedures for Building Inspections and Certificate of Completion • Policy for coordination of approval agencies during building permit review
Attorney General	• Obtain Council approval of Building Act, Regulations • Assign funding for Action Plan tasks annually	• Building Act • Building Regulations
Ministry of Health	• Management of Rural Local Authorities and FNBC building officer program • Provide building plan reviewers and building inspectors for rural areas • Track permit and occupancy data in rural areas and submit to MLG	• Legislative amendment / regulation to enact Rural Local Authorities • Collaborate with MLG on procedures for Building Inspections and Certificate of Completion in rural areas
Ministry of Trade	• Develop procedures for regulation of imported building materials, products and equipment • Approve Fiji standards and acceptable solutions for adoption by Council	• Policy document listing approved building materials, products and equipment imported to Fiji, updated bi-annually
Ministry of iTaukei Affairs, MRMD	• Promote awareness of FNBC in iTaukei villages • Develop procedures for FNBC compliance	• Policy document on compliance and enforcement in iTaukei villages
NFA	• Create list of acceptable firefighting equipment	• National Fire Safety Manual
Water Authority of Fiji	• Develop procedures and execute certification of registered plumbers • Collaborate on rebate programs for green building	• Policy / regulation for Registration of Professional Plumbers • Publish list regularly
EFL	• Collaborate on rebate programs for green energy for individual buildings	
Educational Institutes	• Collaborate with MPWT + MLG to develop Building Permit Reviewer and Inspector Certification Programs	
Professional Organizations	• Improve websites, provide link to FNBC website • Develop training programs • Host workshops, conferences, think tanks	

Cost Overview

Determination of cost is based on knowledge through past experience with similar projects regarding fee structure, length of time to complete and expertise needed to carry out the task. The following chart provides a low ($), medium ($$) and high ($$$) potential cost for each task.

Table 6.4 Potential cost of recommended tasks

A Strengthen LEGISLATION			
.1 New Building Act	$$	.3 Establish Building Committee	$
.2 New Building Regulations	$$	.4 Approve FS1170.2 Wind Speed Standard	$
B Strengthen PROCEDURES			
1. Pre-submission BP Evaluation Process	$	6. Online Building Inspection App	$$
2. Building Code Compliance App	$$	7. Building Inspection Procedures	$
3. Online BP Application System	$$	8. Self-reporting procedures	$
4. Online BP Approval Systems	$$	9. Certificate of Completion Procedures	$
5. NCPD Input Policy	$	10. Peer Review of Building Permits	$
C Strengthen POLICY			
1. National Fire Safety Manual	$$	4. Manual for Informal Settlement Upgrades	$$
2. Heritage Conservation Policy	$	5. Demolition Policy and Procedures	$
3. Cyclone Certificate / Insurance Policy	$		
D Strengthen AWARENESS			
1. Building Code Webpage	$	3. FNBC User Manual	$$$
2. Online access to FNBC, other standards	$	4. Green Building Acceptable Solutions	$$
E Strengthen CAPACITY			
1. Certify Plan Reviewers and Inspectors	$$	6. Montfort Boys' Town	$
2. University of the South Pacific	$$	7. Registered Plumbing Certification	$
3. Fiji National University	$$	8. Training and Professional Development	$$
4. Pacific Polytech	$$	9. Building Industry Website Upgrades	$
5. Australian Pacific Training Coalition	$	10. Online Registration of Trades Technicians	$
F Strengthen RESOURCES			
1. LiDAR / Flood Mapping	$$$	5. Property Identification	$$$
2. Rainfall Data	$	6. Mobile Phone Coverage Expansion	$$$
3. Terrain / Wind Zone Mapping	$$$	7. Information Sheets	$
4. Online Timber Sizing Software	$	8. Administrative + Building Data Analysis	$
G Strengthen QUALITY			
1. Quality Control Lists	$	4. CodeMark / Other Plan Review Software	$$
2. Green Building Materials List	$	5. Regulate Importation	$$
3. Pre-Construction Inspection Procedures	$		
H Strengthen FUNDING			
1. Update Fee Structure	$$	5. IFC Green Bond Program	$
2. Government Grant Programs	$	6. Agency Rebate Programs	$
3. Green Building Cost Analysis	$$	7. Benefactor Funding	$
4. Government Rebate Programs	$$		
I Strengthen COMPLIANCE			
1. Increase Fines and Punitive Measures	$$	3. Streamline Fine Process	$$
2. Council-Approved Fine Increases	$	4. On-the-Spot Fines	$
J Strengthen ENFORCEMENT			
1. Approval Agency Coordination	$	3. List of Exemptions	$
2. Building Permit Assessment Procedures	$	4. Large-scale Development Review	$

Priorities

The Action Plan and 61 recommended tasks create a comprehensive strategy to strengthen compliance and enforcement of the new FNBC, FGCH, and related standards, and is intended to be implemented within the next five years. As shown in previous sections of this report, each task requires a collaboration amongst a number of stakeholders, has varying costs, and a different outcome. It is important to initiate and carry out the recommended tasks in a logical manner as some tasks are dependent on the completion of others, and to respect time commitments of stakeholders, budget and available resources.

Establishing priorities and a five-year plan of action should consider the following variables:

Logical Order

Tasks that need to be completed before others can start:

A Strengthen LEGISLATION
- New Building Act and Regulations
- Establish Building Committee
- Approve FS1170.2 wind speed standard

B Strengthen PROCEDURES
- Online BP applications and approvals
- Online building inspections

D Strengthen AWARENESS
- Building code webpage
- Online access to FNBC and standards

E Strengthen CAPACITY
- Certification program for plan reviewers and inspectors
- Training and professional development

F Strengthen RESOURCES
- Fiji Green Building Scoring System

H Strengthen FUNDING
- Update BP fee structure
- Green building cost analysis

J Strengthen ENFORCEMENT
- BP Assessment procedure

Human Resources

Recommended capacity to implement 5-year Plan:

FNBC Implementation Team
- 3 full-time staff reporting to Director of DBGA

MPWT (public works)
- Director of DBGA

MOH (housing)
- Director of MOH
- 1 part-time staff

MHMS (health)
- Director of MHMS
- 1 full-time staff coordinator / planner
- 14 FNBC building officers for rural areas (minimum)

MLG (local government)
- Director of MLG / DTCP
- 3 full-time staff for the first 3 years

Attorney General
- 1 full-time staff to prepare Building Act, Regulations, and parliamentary submission

MIA and MRMD
- 1 staff for coordination, planning

Local Authorities
- 1-2 staff involved as needed

Agencies (NFA, WAF, EFL)
- part-time planner / coordinator

Educational Institutes
- 1 administrator involved as needed

Organisations (FAA, EF, FMBA, FBDA)
- 1 part-time / occasional staff for coordination
- 1 member to sit on Building Committee

Annual Budget

The annual budget dedicated to the FNBC Action Plan will be shown in the 5-year Capacity Building and Training report. It will be based on annual cost estimates per activity, and should be tracked and adjusted by the FNBC Implementation Team on an annual basis. The financial forecast for the 5-year implementation program should consider increased revenue derived from an increase in application fees and potential donor funding for deliverables such as software development, supporting studies, LiDAR and floodplain mapping, and training programs.

A detailed list of priorities can be found in the 5-year Capacity Building and Training chart.

First Steps

To initiate the Action Plan, the following first steps should be taken:

Director of the Department of the Government Architect (MPWT)

- Advertise, hire, and/or assign 3 full-time staff who will be the FNBC Implementation Team
- Team Leader must have project management, planning and budgeting experience
- Investigate funding opportunities to hire a foreign expert to lead the team, if needed

Directors of DBGA, MOH, MLG, MHMS, MRMD, MIA

- Advertise, hire, and/or assign full-time staff member(s) as appropriate
- Prepare annual budget estimate of operating costs to carry out the 5-year Action Plan
- Initiate all Year 1 activities listed in the 5-Year Capacity Building and Training chart

Director of MHMS (health)

- Advertise, hire, and/or assign full-time staff member(s) as appropriate
- Prepare legislative amendment / new regulation for the Rural Local Authority
- Investigate budgetary and human resource requirements to hire 14 FNBC building officers and combining the duties with the rural public health inspectors
- Initiate all Year 1 activities listed in the 5-Year Capacity Building and Training chart

Director of MOF (finance)

- Advertise, hire, and/or assign full-time staff member(s) as appropriate
- Prepare annual budget estimate of operating costs to carry out the 5-year Action Plan

Office of the Attorney General

- Preparation and approval of the Building Act and Building Regulations

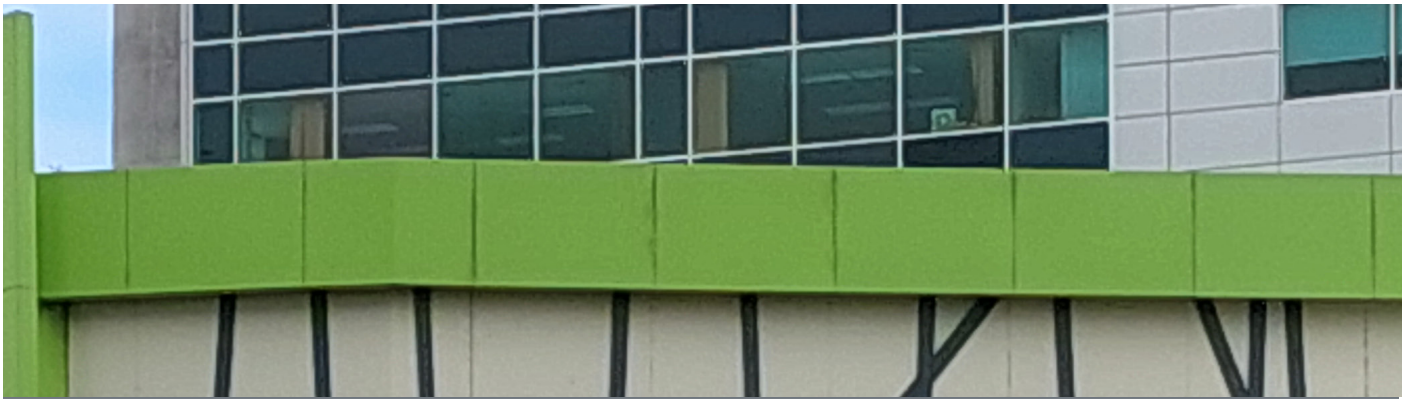
Director of MTCS (trade)

- Carry out process for Council approval of Fiji Wind Speed Standard FS 1170.2

FNBC Implementation Team

- Initiate all Year 1 activities listed in the 5-Year Capacity Building and Training chart
- Schedule Year 1 Management meetings including representatives from ministries, local authorities,

All of the above tasks are anticipated to begin December 1, 2023.



Monitoring

Keeping track of all aspects of the Action Plan is important to ensure that tasks are complete within an appropriate time frame. It allows multiple tasks to be carried out at the same time, and will ensure that projects that lead into other projects are completed and do not slow down progress.

The FNBC Implementation Team as the Action Plan project lead, should have a project management tracking system that has the following capabilities:

- **Task tracking** - project-by-project and separated into the lead stakeholder responsible for the deliverable, such as a ministry, agency or organization
- **Time tracking** - create a schedule for each project, including initiation date, first draft due and submission dates and completion date
- **Budget tracking** - notate the cost estimate for each project, the final budget amount, and reason for any difference so it can become a lesson learned for the next project. Also track overall project costs, for materials, equipment, travel, office supplies
- **Human resource tracking** - create a contact list of persons responsible for each deliverable and track changes
- **Milestone tracking** - track milestones for each project and for the project end to be able to understand when to initiate subsequent projects
- **Donor tracking** - create a list of all projects with donor or benefactor funding
- **Communication tracking** - track all communications shared with the public and internal project management team, as well as comments received from the public and other stakeholders ... all are important sources of information for subsequent updates to the FNBC or other documents
- **KPI tracking** - create and track a list of key performance indicators (KPIs) relevant to the project objectives that indicate if the project is progressing as planned, such as milestone dates, task completion rate, positive and negative feedback received, budget variance, external policy and standard changes that affect the success of the project, among others

FNBC 5-Year Update

The goal for the FNBC is that it be updated every 5 years so that it reflects changes within the building industry regarding building materials, equipment, methods, as well as new environmental, social and economic conditions. The MLG will be collecting data on the number of building permit applications and occupancy certificates issued through a new online system, but further data needs to be collected to inform the 5-year update, as follows:

- Test pilot programs for many of the tasks should be initiated before full adoption, and the success rate should be tracked
- Analysis of whether fees cover the cost of plan review, inspections and travel
- Tracking list of acceptable building materials prepared by MTCS
- Track decisions of appeals and other directives decided by the Building Committee
- Number of graduates certified for plan review and building inspections who are employed
- Track changes to standards in the Australian and New Zealand building codes, and other acceptable solutions that could impact the FNBC

The FNBC Implementation Team should ensure the above tasks are completed as part of the 5-year update.

7.0 CONCLUSION

Summary

Like many countries across the Pacific, the regulation of the construction of buildings in Fiji has been fraught with difficulties and is underfunded, yet the most important function of a building code is to successfully implement the standards through a high level of compliance and enforcement. A proven solution is the drafting of clear, easy-to-follow policies and procedures, training and continued professional development of plan examiners, building inspectors, members of the building industry and residents to create a robust and enforceable protocol for administration of the code and regulations. All of these initiatives need to be supported by funding for effective implementation.

The Compliance and Enforcement report provides a brief situational analysis, gap analysis and 61 Recommended Tasks arranged according to 10 Objectives that ensure the transfer of legislative and administrative power from the Ministry of Health to the Ministry of Infrastructure can be effectively administered, and build capacity for implementation of the FNBC. It provides forward-thinking ideas and suggestions that will advance the objectives of safety, climate resilience and efficiency of the approval process. It describes strategies and actions to implement the FNBC in ten key areas:

1. Legislation
2. Procedures
3. Policy
4. Awareness
5. Capacity
6. Resources
7. Compliance
8. Enforcement
9. Quality of Building Materials
10. Financing

The next step is to initiate the Action Plan.

Key considerations include the following:

- Establish the FNBC Implementation Team to manage the execution of the Action Plan
- Set Priorities
- Secure financing
- Prepare Building Act and Regulations
- Carry out the Action Plan according to the priority-setting in the 5-Year Capacity Building and Training chart (created as a separate document)

All of the above items will be explored in greater detail when the Terms of Reference for 5-year Capacity Building and Training document is complete.

Next Steps

Preparation of this document was a collaborative effort, with many stakeholders who dedicated valuable time and commitment to the task, working and communicating with the consulting team so issues could be fully understood and to generate potential solutions.

Collaboration will continue to be at the forefront as the Action Plan in this document will require the time, dedication and commitment of multiple ministries, agencies and organisations, all led by the FNBC Implementation Team.

Next steps include the following:

1. Approval of this document and the 5-year Capacity building and Training chart by the JTG
2. Execution of the First Steps listed on page 53.
3. Confirmation of the Division of Tasks listed on page 50.
4. Commitment to monitoring listed on page 54
5. Use of this document as a reference throughout the five-year implementation period.

The Compliance and Enforcement Report, together with the 5-Year Capacity Building and Training chart provides a clear step-by-step Action Plan to improve the potential for compliance and enforcement of the Fiji National Building Code.

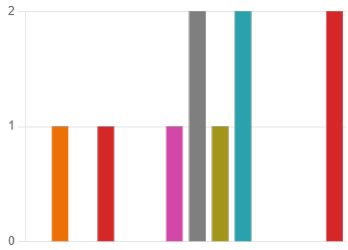
Appendix **A**

Building Permit Plan Processing Questionnaire Municipal Councils

10	02:47	Active
Responses	Average time to complete	Status

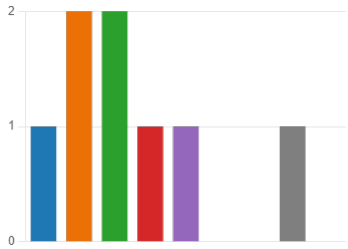
1. **Municipal Council** Which are you with? (0 point)

BA	0
LABASA	1
LAMI	0
LAUTOKA	1
LEVUKA	0
NADI	0
NASINU	1
NAUSORI	2
RAKIRAKI	1
SAVUSAVU	2
SIGATOKA	0
SUVA	0
TAVUA	0
Other	2



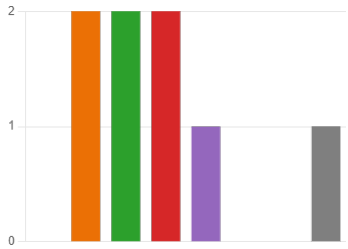
2. **How long have you worked there?** (0 point)

1-5 years	1
6-10 years	2
11-15 years	2
16-20 years	1
21-25 years	1
26-30 years	0
31-35 years	0
36-40 years	1
Option 9	0



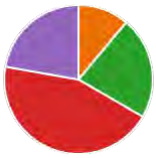
3. **Experience** How many years have you worked in the building industry? (0 point)

1-5 years	0
6-10 years	2
11-15 years	2
16-20 years	2
21-25 years	1
26-30 years	0
31-35 years	0
36-40 years	1



4. **Education** What is your level? (0 point)

High School	0
Apprenticeship	1
Technical College	2
University Undergraduate Degree	4
Post Graduate Degree	2

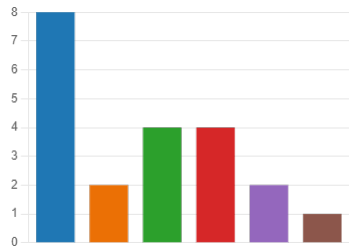


5. How often do you attend **Upskilling or Training**? (0 point)

Twice or more a year	0
Yearly	1
Every couple of years	3
Never	1

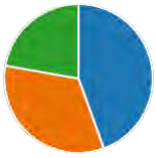
6. **Languages** What do you speak? (0 point)

English	8
Fijian	2
Fijian Hindi	4
Fiji Urdu	4
Cantonese	2
Mandarin	1



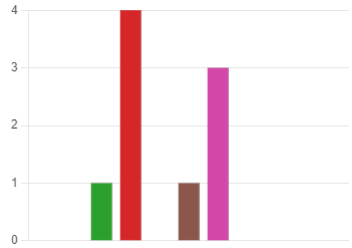
7. **Gender** (0 point)

Male	4
Female	3
Prefer not to say	2

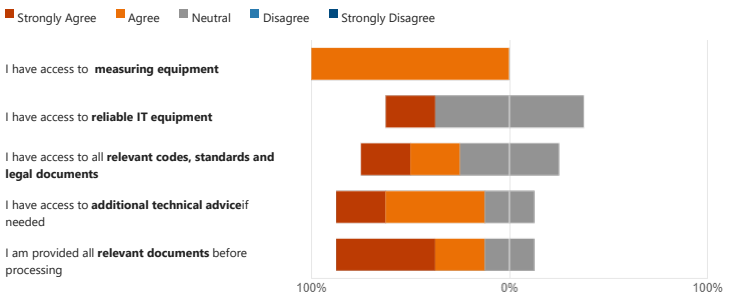


8. **Age** Group (0 point)

15-19	0
20-24	0
25-29	1
30-34	4
35-39	0
40-44	1
45-49	3
50-54	0
55-59	0
60-64	0
65-69	0



9. **Inspections** (0 point)



10. I refer to the **Fiji National Building Code** (0 point)

Very often	1
Often	1
Sometimes	2
Seldom	0

Never	0

11. I refer to the **Fiji Home Building Manual** (0 point)

Very often	0
Often	0
Sometimes	3
Seldom	1
Never	0

12. I would like **Further Training** in (0 point)

Software packages relevant to ...	0
New construction methods	2
Green/Sustainable Construction	0
Updated Building Codes and St...	1
Disaster Resilient Construction	1

13. Please add any **improvements that could be made to permit processing** here (0 point)

4

Responses

Latest Responses

"*-Registration of Qualified Person for preparation and submission of plans f...*

"*Digitalization process for building permits.*"

"*1. All buildings under construction to be inspected by the building inspector* "

Building Inspectors Questionnaire Municipal Councils (3)

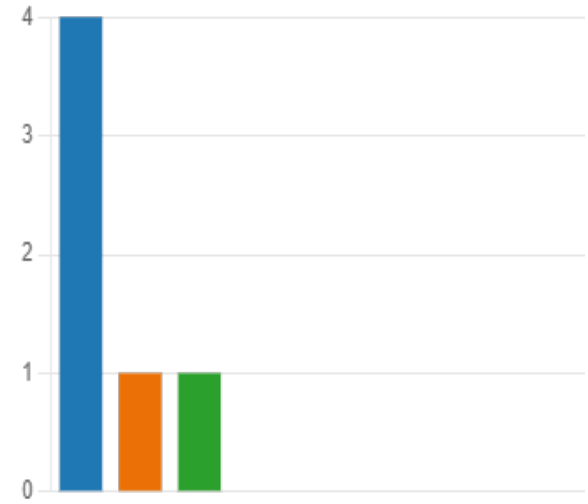
6	12:18	Active
Responses	Average time to complete	Status

1. **Municipal Council** Which are you with? (0 point)

BA	0
LABASA	0
LAMI	0
LAUTOKA	1
LEVUKA	0
NADI	0
NASINU	1
NAUSORI	1
RAKIRAKI	1
SAVUSAVU	1
SIGATOKA	1
SUVA	0
TAVUA	0

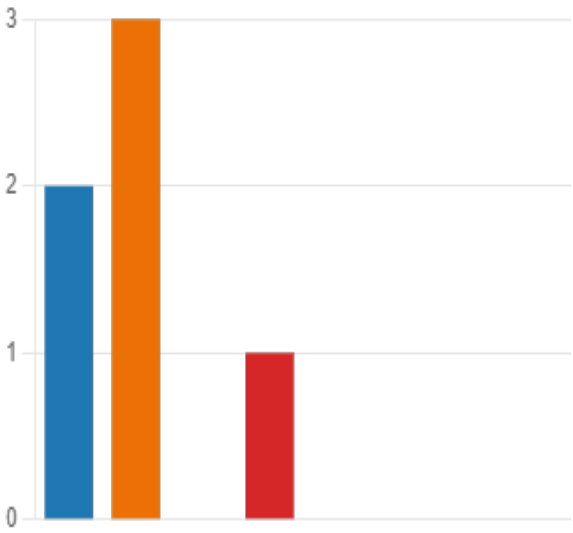
2. **How long have you worked there?** (0 point)

1-5 years	4
6-10 years	1
11-15 years	1
16-20 years	0
21-25 years	0
26-30 years	0
31-35 years	0
36-40 years	0
Option 9	0



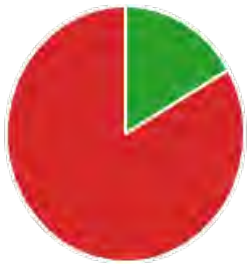
3. **Experience** How many years have you worked in the building industry? (0 point)

1-5 years	2
6-10 years	3
11-15 years	0
16-20 years	1
21-25 years	0
26-30 years	0
31-35 years	0
36-40 years	0



4. **Education** What is your level? (0 point)

High School	0
Apprenticeship	0
Technical College	1
University Undergraduate Degree	5
Post Graduate Degree	0

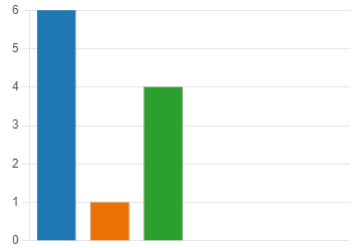


5 How often do you attend **Upskilling or Training** (0 point)

Twice or more a year	2
Yearly	0
Every couple of years	2
Never	2

6. **Languages** What do you speak? (0 point)

English	6
Fijian	1
Fijian Hindi	4
Fiji Urdu	0
Cantonese	0
Mandarin	0

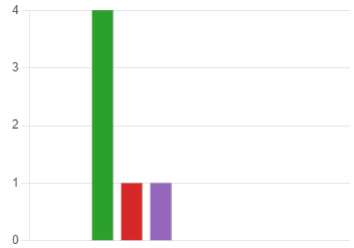


7. **Gender** (0 point)

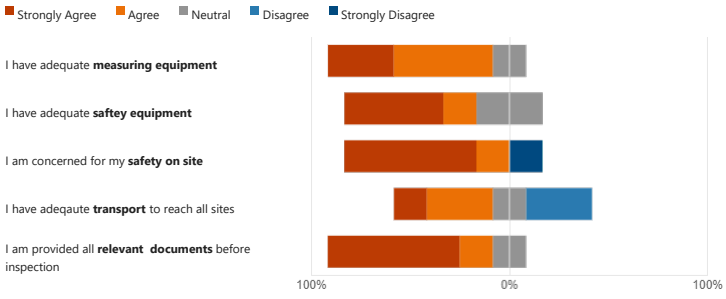
Male	6
Female	0
Prefer not to say	0

8. **Age** Group (0 point)

15-19	0
20-24	0
25-29	4
30-34	1
35-39	1
40-44	0
45-49	0
50-54	0
55-59	0
60-64	0
65-69	0

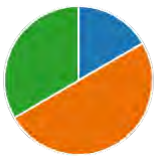


9. **Inspections** (0 point)



10. I refer to the **Fiji National Building Code** (0 point)

Very often	1
Often	3
Sometimes	2
Seldom	0
Never	0



11. I refer to the **Fiji Home Building Manual** (0 point)

Very often	0
Often	1
Sometimes	2
Seldom	1
Never	2

12. I would like **Further Training** in (0 point)

13. Please add any **additional comments** here (0 point)

Latest Responses

6 *"it would be good to see Fiji adapt to the new development methods and des...* Responses *"Requesting for Skill Development short courses on Workplace Leadership a...*

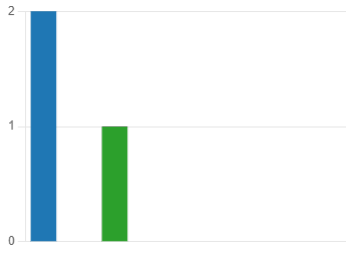
"Review of Fiji National Building Code as it's not been reviewed after so long."

Town Planners Questionnaire - Town and Country Planning

3	114:12	Active
Responses	Average time to complete	Status

1. **How long** have you worked at Town Planning? (0 point)

1-5 years	2
6-10 years	0
11-15 years	1
16-20 years	0
21-25 years	0
26-30 years	0
31-35 years	0
36-40 years	0
Option 9	0



2. Please **describe the tasks** you undertake in your job (0 point)

3
Responses

Latest Responses

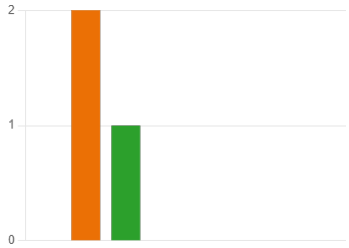
"Processing of Building applications, site inspections and issuance of buildin...

"The tasks include providing Planning Comments on Building Development ...

"verify the application, process to approve with comparison to the standards...

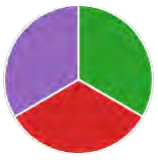
3. **Experience** How many years have you worked in the building/planning industry? (0 point)

1-5 years	0
6-10 years	2
11-15 years	1
16-20 years	0
21-25 years	0
26-30 years	0
31-35 years	0
36-40 years	0



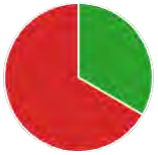
4. **Education** What is your level? (0 point)

High School	0
Apprenticeship	0
Technical College	1
University Undergraduate Degree	1
Post Graduate Degree	1



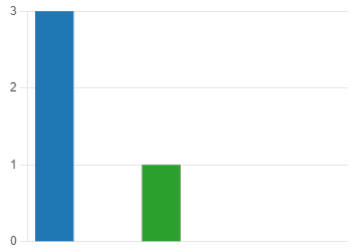
5. How often do you attend **Upskilling or Training**? (0 point)

Twice or more a year	0
Yearly	0
Every couple of years	1
Never	2



6. **Languages** What do you speak? (0 point)

English	3
Fijian	0
Fijian Hindi	1
Fiji Urdu	0
Cantonese	0
Mandarin	0



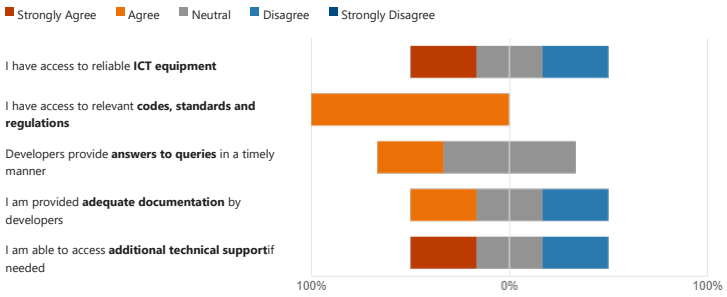
7. **Gender** (0 point)

Male	3
Female	0
Prefer not to say	0

8. **Age** Group (0 point)

15-19	0
20-24	0
25-29	1
30-34	1
35-39	1
40-44	0
45-49	0
50-54	0
55-59	0
60-64	0
65-69	0

9. **Development Permission** (0 point)



10. I refer to the **Fiji National Building Code** (0 point)

Very often	0
Often	1
Sometimes	1
Seldom	0
Never	1

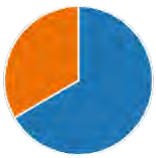
11. I refer to the **Fiji Home Building Manual** (0 point)

Very often	0
Often	1
Sometimes	0
Seldom	1

Never 1

12. I would like **Further Training** in (0 point)

Town Planning Laws and Regula... 2
Relevant Software Packages 1
Green/Sustainable Design 0
Updated Building Codes and St... 0
Disaster Resilient Design 0



13. Please add any **improvements that could be made to development permission** here (0 point)

Latest Responses

3 Responses

"Updated checklist to be implemented in terms of all relevant documents ne..."

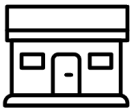
"That consultants be regulated by some form of qualified professional syste..."

"If the approval processing can be done online with relevant authorities."

Appendix **B**

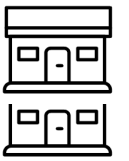
Class 1

a) single residential home/accommodation unit, 3 storeys (10m height) max.



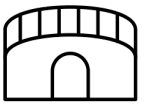
b) terrace or townhouse residential up to 8 side-by-side units, 3 storeys (10m height) max.

c) stacked residential duplex

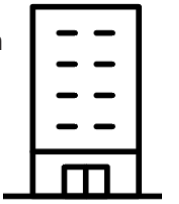


Class 2

a) a boarding house, hostel, or hotel (max. of 12 occupancy rooms or units)

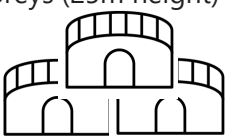


b) Multiple occupancy residential building with stacked units, 4 storeys (12m height) max, and four units per storey max.)

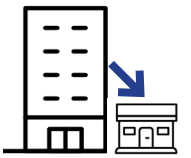


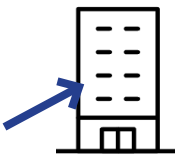
Class 3

a) a boarding house, hostel, or hotel (> 12 accommodation units per building, 8 storeys (25m height) max.)



b) residential part of a hotel, motel, school or health-care building for staff members



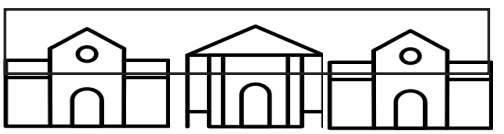


Class 4

Dwelling in a Class 5 - 9 building if it is the only dwelling in the building

Class 5

a) Medium to high occupancy office building for professional or commercial use, or shopping mall with > 8 occupancy units



b) Highrise (> 8 storeys, 25 m height) for residential, office, commercial or a combination, multiple units on the same storey

Class 6

Retail shop or service, single occupancy, including

a) eating room, cafe, restaurant, milk or soft-drink bar
b) dining room, bar and/or shop in a hotel or motel
c) hairdressers, barber shop, public laundry, undertakers
d) market or sales room, show room, service station

Class 7

A commercial building for:

a) storage, display of goods or produce for sale by wholesale, and/or
b) car park

Class 8

Industrial building, including:

a) laboratory or industrial building for production, altering, repair, packing, finishing or cleaning of goods, or produce for trade, sale or gain, and/or
b) any building that stores, handles or manufactures hazardous materials

Class 9

Public welfare buildings and gathering places, including

a) health-care building, including a pathology laboratory
b) places of worship, school, universities, sport facilities, night clubs, trade workshops
c) buildings for the care of children, the elderly, people with a disability
d) public works buildings
e) any building that will serve as an evacuation centre following a disaster

Class 10

Non-habitable buildings and structures

a) carport, private garage, shed, and the like
b) fence, mast, antenna, retaining or free-standing wall, swimming pool, and the like

Appendix C

BA TOWN COUNCIL
DEVELOPMENT CHECK LIST

MAJOR DEVELOPMENT

(RESIDENTIAL/TOURISM/COMMERCIAL/INDUSTRIAL)

1.) CONCEPTUAL PLAN/OUTLINE PLAN

	THINGS TO BE SUBMITTED	
1.	Proposal Letter (developer to state the nature/activity type of development on the)	
2.	Proof of ownership (Title or lease documents)	
3.	Survey Plan of the site (boundary pegs to be marked by a registered surveyor)	
4.	3 sets of Conceptual plan/outline plan	
	Plans should include the following	
	1. Locality Plan	
	2. Site (including drive way access and car parks)	
	3. Floor Plans	
	4. Elevation Plans (including all four sides of the structure)	

Note;

1. **Outline application fees is applied based on the calculations done on the building value by the Council. (Outline application fees payable to Department of Town and Country Planning)**
2. **Outline application to be only accepted upon meeting the above requirements**
3. **Processing timeline for the building applications is 10 working days plus processing time for Department of Town and Country Planning.**

2.) BUILDING APPLICATION

	THINGS TO BE SUBMITTED	
1.	3 copies of Building Application forms	
2.	3 copies of Development Forms	
3.	3 copies of specifications	
4.	Proof of ownership (Title or lease documents)	
5.	Survey Plans of the site (survey to be done by a registered surveyor)	
6.	3 sets of Building Plans	
	Building plans should include the following	
	1. Locality Plan	
	2. Site (including drive way access and car parks)	
	3. Drainage Plan(including storm water drainage and waste water disposal plan)	
	4. Floor Plans (including floor set out plans, Machine set out plans and electrical plans)	
	5. Elevation Plans (including all four sides of the structure)	
	6. Cross sectional plans	
	7. Detailed plan for amenities	
	8. Structural detailed plan	
	9. Land scape details	
	10. Car park details	
	Building plans to be certified by the following;	
	1. Land lord Consent (TLTB, Crown land, Housing Authority)	
	2. Structurally Sound by a MFIE Engineer (Member of Fiji Institute of Engineers)	
	3. Plans to be a certificated by National Fire Authority	
	4. Plans to be a certificated by Occupation, Health and Safety Department	
	5. Water Authority of Fiji - Sewer connections - where applicable	

Note;

1. **Building fees is applied based on the calculations done on the building value by the Council. Building fees payable to Council and Department of Town and Country Planning.**
2. **Building Plans to be only accepted upon meeting the above requirements**
3. **Together with the application other requirements such as EIA report, FRA approval and so on may be required depending on the project.**
4. **Processing timeline for the building applications is 10 working days plus processing time for Department of Town and Country Planning.**

Endnotes