

# PROPOSED FIRE SAFETY CHANGES TO THE NATIONAL CONSTRUCTION CODE 2019 AFFECTING EARLY CHILDHOOD CENTRES

## SECTION 1 INTRODUCTION

Ferm Engineering have been engaged to assist the Australian Childcare Alliance NSW (ACA) to prepare a response to the proposed changes to the 2019 National Construction Code (NCC) with respect to *Early Childhood Centres*. We acknowledge the ACA NSW represent a significant number of childcare centres in New South Wales, predominantly 1-2 storeys.

### 1.1 Do you agree with the description of the problem?

We agree in principle. There are challenges with locating childcare facilities in high rise buildings, specifically in busy business districts and in locations that are not designed exclusively for children. Even though the vast majority of childcare facilities are not more than 3-storeys and (the facilities the Australian Childcare Alliance NSW represent) are purpose built or buildings dedicated to the care of preschool/kindergarten aged children.

### 1.2 Are there any other characteristics of the problem not identified?

The design of the evacuation routes, specifically the design of the stairs, as described in the D2.16 of the NCC has not been chosen for review. The gaps between the handrails allowed in table D2.16 of up to 460mm, this is inappropriate for youngest children independently walking down the stair (~15 months). It is already requirement of the various education departments in Australia that evacuation drills be conducted every 3 months, the design of stairs, with features that support the movement of children would seem appropriate. This would require a review of the performance requirement DP3, the current exemption is inadequate.

The procedures of the childcare facility for evacuation are critical to the success and repeatability of evacuation times. Australian childcares are required to repeat the evacuation process every 3 months allowing for greater familiarity for the staff and the children of the evacuation process. From our significant pool of childcare facilities, we can confidently say that evacuation times, from alarm activation to exiting the building to a safe place would be less than 5 minutes. It is noted in a draft version of the Engineers Australia, Society of Fire Safety practice note, that with a well-designed detection system, the development of a significant fire to the point where a sprinkler would be caused to activate, would be approximately 4 minutes. It would be reasonable to expect that the vast majority of childcare facilities would have evacuated before the sprinkler would have activated.

There is a need to maintain the security and the safety of the children, there is a difference between movement to a safe place and exiting the building to the city streets. The building design and approval process needs to account as to where the children will assemble and the routes taken, particularly in multi-use occupancy building. This is currently included in Education and Care Services National Law Act 2010, this is currently referenced in Schedule 4 of the NCC (Referenced Documents) but should be called up in either the DfS or Performance Requirements.

Previous studies of childcare evacuations from overseas (Larusdottir & Dederichs and Kholshchevnikov) report other issues such as dressing for the European weather (Denmark & Russia) before evacuating. Although Australia doesn't suffer the cold, the children can often be barefoot and moving across pedestrian surfaces, such as city streets, should form part of the strategy of moving to a safe place.

With dedicated facilities up to 4 floors, the ability to locate the most vulnerable children (those without the ability to walk) on the ground floor has not been a considered. This feature speaks directly as to how the organisation and procedures of an active centre can be arranged to facilitate the fire safety objectives of the Building Code.

### **1.3 Are there any other feasible options not identified?**

A simple amendment to one of the options to allow the current deemed to satisfy provisions only to apply to standalone facilities and not to multi-occupancy buildings that have a childcare tenancy located in them.

### **1.4 Do you have any other comments to make on the options?**

The blanket requirement for sprinklers in buildings has not been justified by the Red Fire report with the EFT peer review questioning the parameters on which they were based. With the proven evacuation times that can be achieved.

The proposed changes in the Amendment to the NCC would capture all two storey standalone centres, of which there are thousands and the majority across Australia. Based on the information presented for consultation this would seem completely unjustifiable.

### **1.5 Do you have information that can assist in informing the analysis?**

Our members are predominantly in single occupancy buildings with overwhelming majority 2 storeys or less with a very small percentage of up to 4 storeys. The overwhelming number of occupancies caring for about 50 children or less. This agrees with the national picture when reviewing the data available from the ACECQA.

The data collected from the mandated 3 monthly evacuations of childcare centres would better inform the decision-making process and would likely call into question the efficacy of installing a sprinkler system. The use of movement assistance apparatus and staff ratios study was conducted by Ferm Engineering.

An extended abstract submitted the Society of Fire Protection Engineering (SFPE) for the 13<sup>th</sup> International Performance-Based Codes and Fire Safety Design Methods Conference, supports the claim that a standalone, 4-storey early childhood centre can be evacuated in less than 4 minutes. (W.Blake - Evacuation Data Collection and Analysis in A Multi-Storey Childcare Center)

### **1.6 Of the options discussed, which is your preferred option?**

Of the options presented the only one that would be acceptable would be Option 3 Restrict the current Deemed to Satisfy (DtS) provisions for childcare located on a single level. A better option would be the preferred option if the restriction of DtS was for 3 storey and below for standalone facilities.

## SECTION 2 DECLARATION

Ferm Engineering have prepared this document based on the years of research in the field of childcare fire safety. The document was prepared in conjunction Chiang Lim of the Australian Childcare Alliance NSW who has provided additional information and insight into the operations of significant cross section of the facilities in Australia.

If we can provide any further information, please contact Ferm Engineering on 07 3277 6314.

### Authors and Approvals

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