

PROJECT:	Curtin University (SoDBE)
LOCATION:	Bentley WA
SCOPE OF WORK:	Wet/Dry Fire Protection
COMPLETION DATE:	August 2021
CONTRACT VALUE:	\$1.5M

The Curtin University B418 project comprises the construction of an education building (School of Design and the Built Environment–SoDBE). An underground car park also forms part of the University campus. The new facility will be a landmark building for the university and will contribute significantly to the vibrant University community, enabling world-class student engagement, learning and teaching, research, collaboration and industry partnerships.

The five-storey building has been designed to include technology driven collaborative learning spaces, open-plan workspaces and a dynamic ground floor featuring a central courtyard and exhibition and retail space.



For this project Firesafe were awarded the contract with Lendlease to install Fire Protection to the new building.

SCOPE DETAILS

Within our scope, we were tasked with the design and installation of:

- A compliant Fire Sprinkler system in accordance with AS 2118.1 - 2017
- A compliant Fire Hydrant system in accordance with AS 2419-2005
- Fire Hose Reels in accordance with AS 2441
- Fire Pumps in accordance with AS 2941-2013
- Fire Extinguishers in accordance with AS 2444-2001
- A compliant Fire Detection & Emergency Warning & Intercommunication system in accordance with AS 16701 and AS 1670.4 (2015)

The fire sprinkler system is independent to the fire hydrant system and is fed by a non-boosted main with pumps and tanks which are located within the Basement accessible via Stair 1. The system is also provided with a sprinkler booster assembly located on the Southern side of the building along Koorliny Way.

The water supply for the fire sprinkler system is fed via the Water Corporation town's main which is connected to the fire water storage tank located within the Fire Pump Room within the Basement. The water storage tank is a panel tank providing the primary water supply.

Sprinkler Control Valves are located within Stair 2 at each landing for the floors associated sprinkler protection.

Fire Hydrants have been installed within B418 Stair 1 & 2 at each level and out on the floors. There are also feed hydrants installed in the Fire Services Booster Cabinet at B151. The water supply for the hydrants is separate to the water supply for the Fire Sprinkler system. The hydrants are fed from the campus site wide booster fire main which are fed via the existing pumps and tanks located at Building B151.

Hose Reels have been installed throughout the building adjacent to the fire hydrants. Water for the hose reels is also supplied from the university boosted fire main supplied by the pumps at Building B151.



Upon activation of either a hydrant or hose reel, the pumps may start, and a signal will be sent to the Main Fire Indicator Panel associated with the university hydrant infrastructure located at the above building.

The fire pumps installed for the fire sprinkler system comprise of a Duty Pump, Standby Pump and Jockey Pump. These are located in the Fire Pump Room in the Basement of Building B418 adjacent to Stair 1 and the lift lobby. The pump suction is connected to a 1300kL water storage tank as a primary water supply for the system.

The Main Fire Indicator Panel (MFIP) and Fire Fan Control Panel (FFCP) are located in the entry airlock on the Ground Floor of Building B418. All fire alarm signals are set to be repeated on the Building Graphics system.



CHALLENGES & SOLUTIONS

Throughout the project we were faced with various challenges:

Whilst works were in progress, a design defect raised by DFES was overcome with no cost or program impact. This was successfully achieved by Firesafe Project Management liaising with the Australian Standards Committee and The Curtin University SODBE Project Engineers to produce further project documentation to satisfy DFES requirements.

The Curtin University precinct remained fully operational during the construction of the new building, therefore Firesafe had to communicate and program with the Lendlease Project Team, other trades and existing Building Management & employees during sound testing and general services commissioning of the installed services to minimise disruption.