Annexure 4

31 Day St Design Statement

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31 Day St Design Statement

The Project

Existing building at 31 Day St situated within close proximity of Karangahape road and needs remediation works to the façade.

The existing building is 12 Stories and is of concrete construction, originally built in the mid 1990's The existing concrete structure has been suffering the elements and has cases of concrete spalling and large amounts of chlorination of the concrete with insufficient concrete cover over the steel reinforcing.

The proposed remediation consists of targeted repair to the concrete with a complete overclad to preserve the structure and prolong the life of the building.

Included in the works is enclosure of the balconies in order to minimise risk of further water ingress.

Current Building Condition

The building has been assessed by "Reveal Building Consultants" and in the investigation has found multiple failures in the façade and needs remediation.

Table below outlines some failures and recommended remediations:

Joinery	Water ingress through window joinery and black mould growth to internal linings around windows	Full replacement of joinery and replace internal linings to surrounding areas
Inter-tenancy screens on Balconies	Inter-tenancy Privacy screen on balconies - have elevated levels of capacitance readings with visible signs of water damage	New intertenancy privacy screens to be constructed in new concrete nib
Balconies	Peaking tiles with visible moisture related defects	Remove existing tiles and membrane and replace with new. Balconies to be altered and remediated to achieve current NZBC standards
Top fixed balcony balustrades	Visible damage to top of concrete nibs causing rusting of reinforcement and cracking	To be fully replaced with face fixed balconies and nibs to be remediated
Spalling Concrete	Concrete over reinforcing steel	Specialised targeted repair to be done, all works to be assessed by concrete specialist
Main roof Podium	Moisture stains and damage to ceiling below with High capacitance meter readings	Full replacement of roof membrane and all adjoining items, to be remediated up to current NZBC standards
Lift / Service building	High risk junctions with cracks to cladding and high capacitance	All timber framing on exterior walls to be replaced and cladded

	readings recorded in timber framing	with new complaint claddings suited for the wind zone
Basement Carpark	Water ponding to the south wall with high levels of water ingress	Requires significant remediation works to basement and surrounding areas which include new membranes, crack repairs, new drains, new flashings, etc

Full scope can be found in the report done by Reveal Building Consultants dated 7/11/2018

Proposed Remediation

There were several investigations undertaken to find the best solution to remediate the building the following avenues were investigated.

1. Recoating of the concrete façade with new joinery and new membranes to balconies
    a. This is the most economical in the short term however was found to be expensive for the life span of the building as it would have to be recoated every 15-20 years, and still has high risk of future failures.
2. Partial overclad with new membranes to balconies
    a. This study was undertaken to have aluminium cladding over the high risk and worst effected areas with recoating of concrete to low-risk areas. However, this study found it was not economically viable for the lifespan of the building.
3. Complete overloading new joinery and new membranes to balconies
    a. This study was found to be more economical for the life span of the building and overall achieves a better result to resolve water ingress issues however the balconies still posed high risk as there would be very high-risk junctions to the balconies.
4. Completely overclad entire building and enclose balconies with a curtainwall façade
    a. This was investigated to resolve the issues of water ingress of the balconies; this also has a better result for the life cycle of the building. As a by-product it significantly updates the look of the building and increases the GFA of the apartments which makes the remediation more worthwhile for the owners.

The existing building geometry is of a large mass imposing West façade where there is small number of windows for the habitable spaces. To the North and south facades consist of balconies which impose a horizontal geometry language to the building. The balconies are of a curved spandrel design with steel vertical railings reflecting to the 1990s design era.

The proposed remediation is an overclad with a curtainwall façade to the North and South elevations of the building enclosing the existing balconies.

The Proposed façade changes the design language to a vertical design scheme. Due to proximity of the road frontage boundary, the curtainwall had to be designed in such a way to break up the facade to create articulation as well as directing natural light into the apartments.

The middle curtainwall segment is parallel to the front boundary to maximise the space, the two side vertical strips are of an angular design to both maximise internal space while remaining within the boundary, sidelights to the adjacent sides of the curtainwall in order to maximise natural light entering the apartment units. This has the added effect of breaking up the facade and creating articulation to reduce the dominating effect of the building mass.

The West façade currently has a very dominating mass effect with no other large neighbouring building to help break this effect. The proposed scheme entails of an aluminium cladding panel façade with varying colours this helps reduce the overall effect of the bulk mass by creating interest to the façade by a bit of playful pattering while in keeping with the original façade openings there is a show of randomised placement of colours which breaks up the façade.

Due to this language on the west façade this was carried through on the east elevation as well as the North and South curtain facades as well as a randomisation of openings, fixed glass panels, and solid aluminium panels

The proposed centre curtainwall strip on the street boundary encroaches the boundary by approximately 300mm this overhang intern creates interest to the streetscape and increases street amenity.

The ground floor units are also in need of remediation and are updated with a new stairs and privacy screens leading up to the apartments also as part of the remediation added floor area to the units with full height glazing to maximise the outlook view to the street.

On level 12 the existing roof which is a communal space for the residents to enjoy the views and fresh air. This space is also being remediated due to roof membrane failure insufficient heights on parapets for safety from falling. Will have the space newly renovated with new membranes and aluminium clad parapets for the balustrading, articulation of areas there will be a mixture of deck and raised Astro turf areas to create amenity for the residents to enjoy.

The lift motor room on level 12 needs full exterior replacement, and therefore gives the opportunity for a full redesign. The existing motor room had a curved roof structure that is dated and no longer in keeping with the proposed exterior façade works.

This existing room infringes the Volcanic viewshaft, so this was taken into careful consideration in the proposed replacement structure. The proposed structures aim is to match the proposed façade work of the rest of the building as well as minimising the effects infringing View shaft.

The proposed design is a complete change of shape of the structure with a reduced area of infringement, it is noted this infringement cannot be completely removed due to the elevators lifting beam that cannot be altered as its required for the maintenance of the elevator and therefore “As near reasonably practical” needs to be considered in this situation.

In overall the proposed remediation design updates the look of the building with a more modern look with the glass and aluminium façade, randomisation of coloured panels creating interest to the façade which in effect reduces the imposing mass of the West façade. Modernizing the ground level entry with the updated ground floor units will make the building more inviting at street level.