GREAT LAKE TAUPŌ
Taupō District Council

ATTACHMENTS

UNDER SEPARATE COVER

Extraordinary Council Meeting

13 April 2017

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Certificate of Analysis

Clearsafe ENVIRONMENTAL SOLUTIONS

Clearsafe Environmental Solutions Pty Ltd
16 Stewart St, Wollongong NSW 2500
info@clearsafe.com.au
1300 042 962

Report Number: 45-1353-01-ID
Date of Report: 24/8/2016
Date of Analysis: 23/8/2016
Site Address: 72 Lake Terrace, Taupo
72 Lake Terrace Taupo 3330
Client Name: Ward Demolition Limited
Client Address: 13-17 Miami Parade
Onehunga Auckland 1642

Client Contact: Chris Harris
Sampled By: Solomone Weilert
Approved Identifier: Nathan Crouch
Approved Signatory: Ryan Heckenberg

Test Method: Asbestos identification in bulk samples by polarised light microscopy and dispersion staining, in accordance with 'AS4964-2004 Method for the Qualitative Identification of Asbestos in Bulk Samples' and Clearsafe Method SOP.ID.01 [Detection Limit - 0.1g/kg (AS4964)].

Notes: The results contained within this report relate only to the samples tested. This report should not be copied, presented or reviewed except in full.

An independant analytical technique is recommended for confirmation of vinyl and bituminous samples, or samples in which 'Unknown Mineral Fibre' is detected.

NATA accreditation relates to the analysis of the sample(s) and does not cover the sample collection process.

Sample Number	Sample Reference / Location	Description **	Result *
45-1353/1	Building 1A, external, southern wall, bottom western corner	Fibrous Board, Ribbon-Like Fibres. Sample Size: 25x10x3mm	No Asbestos Detected [6]
45-1353/2	Building 1A, external, southern side, western corner, soil	FCS (35x20x3mm) Within Soil / Ore, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 7.5g	Asbestos Detected [1,2,3]
45-1353/3	Building 1A, external, southern side, eastern corner, soil	FCS (25x12x3mm) Within Soil / Ore, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 8.7g	Asbestos Detected [1,2,3]
45-1353/4	Building 1A, external, eastern side, base boarding, central door	Fibrous Board, Ribbon-Like Fibres. Sample Size: 22x20x3mm	No Asbestos Detected [6]
45-1353/5	Building 1A, external, eastern wall, bottom southern corner	Fibrous Board, Ribbon-Like Fibres. Sample Size: 10x5x2mm	No Asbestos Detected [6]

*** Result Codes:**

1 - Chrysotile Asbestos Detected
2 - Amosite Asbestos Detected
3 - Crocidolite Asbestos Detected
4 - Unknown Mineral Fibre Detected
5 - Synthetic Mineral Fibre (SMF) Present
6 - Organic Fibres Present

**** Description Codes:**

FCS - Fibrous Cement Sheeting
VFT - Vinyl Floor Tile

NATA WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory No. 18542

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian / national standards.

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45-1353/6	Building 1A, external, western wall, bottom southern corner	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 20x15x3mm	Asbestos Detected [1,2,3]
45-1353/7	Building 1A, external, northern wall, bottom western corner	Fibrous Board, Ribbon-Like Fibres. Sample Size: 24x12x4mm	No Asbestos Detected [6]
45-1353/8	Building 1A, external, southern side, western corner, soffit	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 20x10x2mm	Asbestos Detected [1,2,3]
45-1353/9	Building 1A, external, eastern side, central, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 24x8x3mm	No Asbestos Detected [6]
45-1353/10	Building 1A, external, northern side, eastern corner, gable end	Fibrous Board, Ribbon-Like Fibres. Sample Size: 18x10x2mm	No Asbestos Detected [6]
45-1353/11	Building 1B, external, southern side, central, soffit	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres. Sample Size: 10x8x3mm	Asbestos Detected [1,2]
45-1353/12	Building 1C, external, central southern side, gable end	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres. Sample Size: 15x10x2mm	Asbestos Detected [1,2]
45-1353/13	Building 1C, external, northern side, eastern corner, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 16x6x2mm	No Asbestos Detected [6]
45-1353/14	Building 1C, external, western wall, far southern side, bottom corner	Fibrous Board, Ribbon-Like Fibres. Sample Size: 8x5x2mm	No Asbestos Detected [6]
45-1353/15	Building 1C, external, far southern wall, central, bottom	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres. Sample Size: 90x50x4mm	Asbestos Detected [1,2]
45-1353/16	Building 1C, external, northern wall, central, bottom	Fibrous Board, Ribbon-Like Fibres. Sample Size: 35x25x4mm	No Asbestos Detected [6]
45-1353/17	Building 2, external, south eastern wing, level 1, dark green upper wall	Fibrous Board, Ribbon-Like Fibres. Sample Size: 20x10x3mm	No Asbestos Detected [6]
45-1353/18	Building 2, external, south eastern wing, level 1, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 10x6x3mm	No Asbestos Detected [6]
45-1353/19	Building 2, external, south eastern wing, level 1, cream textured paint	Paint Sheeting, No Visible Fibres. Sample Size: 5x4x2mm	No Asbestos Detected
45-1353/20	Building 2, external, south eastern wing, ground floor, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 12x6x2mm	No Asbestos Detected [6]
45-1353/21	Building 2, external, south eastern wing, level 1, above windows, pink wall lining	Fibrous Board, Ribbon-Like Fibres. Sample Size: 22x16x3mm	No Asbestos Detected [6]
45-1353/22	Building 2, external, southern side, western entrance, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 7x5x2mm	No Asbestos Detected [6]

*** Result Codes:**

1 - Chrysotile Asbestos Detected
2 - Amosite Asbestos Detected
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4 - Unknown Mineral Fibre Detected
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**** Description Codes:**

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45-1353/23	Building 2, external, southern side, adjacent western window lip framing, cream textured paint	Paint Sheeting, White Silky Pliable Fibres. Sample Size: 10x5x2mm	Asbestos Detected [1]
45-1353/24	Building 2, external, southern side, adjacent western window lip framing, wall lining	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 14x12x3mm	Asbestos Detected [1,2,3]
45-1353/25	Building 2, external, southern side, far western end, above windows, soffit	Fibrous Board, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 14x8x2mm	Asbestos Detected [1,2,3]
45-1353/26	Building 2, external, southern side, central, dark green upper wall	Fibrous Board, Ribbon-Like Fibres. Sample Size: 14x12x2mm	No Asbestos Detected [6]
45-1353/27	Building 2, external, southern side, central, soffit	Fibrous Board, Ribbon-Like Fibres. Sample Size: 10x8x2mm	No Asbestos Detected [6]
45-1353/28	Building 2, external, southern side, central, wall lining	Fibrous Board, Ribbon-Like Fibres. Sample Size: 20x18x3mm	No Asbestos Detected [6]
45-1353/29	Building 2, external, north eastern corner, wall lining	Fibrous Board, Ribbon-Like Fibres. Sample Size: 50x20x8mm	No Asbestos Detected [6]
45-1353/30	Building 2, external, northern staff entrance, wall lining	Fibrous Board, Ribbon-Like Fibres. Sample Size: 20x12x2mm	No Asbestos Detected [6]
45-1353/31	Building 2, external, northern side, western end, pink wall lining	Fibrous Board, Ribbon-Like Fibres. Sample Size: 6x4x2mm	No Asbestos Detected [6]
45-1353/32	Building 2, external, far western side, wall lining	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 40x14x4mm	Asbestos Detected [1,2,3]
45-1353/33	Building 2, external, western end, northern soffit	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 30x10x3mm	Asbestos Detected [1,2,3]
45-1353/34	Building 2, external, western end of building, central, eastern upper wall, soffit	FCS, White Silky Pliable Fibres, Brown Rod-Like Fibres, Blue Rod-Like Fibres. Sample Size: 12x6x3mm	Asbestos Detected [1,2,3]
45-1353/35	Building 2, internal, ground floor, northern extension, central, fifth structural beam from eastern side, running north to south, ceiling space, sprayed insulation	Fibrous Clump, Glassy Rod-Like Fibres. Sample Size: 45x20x4mm	No Asbestos Detected [5]
45-1353/36	Building 2, internal, ground floor, cupboard opposite Tauhara room, southern side, angled ceiling	Fibrous Board, Ribbon-Like Fibres. Sample Size: 14x8x2mm	No Asbestos Detected [6]

*** Result Codes:**

1 - Chrysotile Asbestos Detected
2 - Amosite Asbestos Detected
3 - Crocidolite Asbestos Detected
4 - Unknown Mineral Fibre Detected
5 - Synthetic Mineral Fibre (SMF) Present
6 - Organic Fibres Present

**** Description Codes:**

FCS - Fibrous Cement Sheeting
VFT - Vinyl Floor Tile

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45-1353/37	Building 2, internal, ground floor, western end, opposite bathrooms adjacent communications room, textured paint wall	Paint Sheeting, No Visible Fibres. Sample Size: 7x6x2mm	No Asbestos Detected

*** Result Codes:**

1 - Chrysotile Asbestos Detected
2 - Amosite Asbestos Detected
3 - Crocidolite Asbestos Detected
4 - Unknown Mineral Fibre Detected
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6 - Organic Fibres Present

**** Description Codes:**

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Taupo County Council Building
Asbestos Register Report

Asbestos Occurrences:	12
High Risk Occurrences:	0
Overdue for Reinspection:	0
Total Not Labelled:	12

Date of Report:	26 August 2016
Report Reference:	AsbestosRegister_TaupoCountyCouncilBuilding_20 1608260626
Site:	Taupo County Council Building
	72 Lake Terrace, Taupo, New Zealand 3330

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, new extension, external, level 1, eastern wing, fascia (all sides of new extension presumed same). Fibrous Cement Sheeting (FCS). Extent: 50-100m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 26/8/2016]	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/17, 26 Result: No asbestos detected	N/A	
		Building 2, new extension, external, level 1, eastern wing, soffits and eaves (all sides of new extension presumed same). Fibrous Cement Sheeting (FCS). Extent: 20-50m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 26/8/2016]	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/18, 27 Result: No asbestos detected	N/A	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, new extension, external, level 1, eastern wing, south eastern side (all sides of new extension presumed same). Textured Paint. Extent: 50-100m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 25/8/2016]	N/A	Negative	First Recorded: 25/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/19 Result: No asbestos detected	N/A	
		Building 2, new extension, external, ground floor, eastern wing, soffit . Fibrous Cement Sheeting (FCS). Extent: 20-50m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/20 Result: No asbestos detected	N/A	
		Building 2, new extension, external, level 1, eastern wing, above windows, wall lining (all sides of new extension presumed same). Fibrous Cement Sheeting (FCS). Extent: 1-10m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 26/8/2016]	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/21 Result: No asbestos detected	N/A	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, new extension, external, south eastern side, veranda soffit . Fibrous Cement Sheeting (FCS). Extent: 1-10m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/22 Result: No asbestos detected	N/A	
		Building 2, original building external, far southern end, eastern side (all sides of original building presumed same). Textured Paint. Extent: 50-100m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 26/8/2016]	Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353/23 Result: Asbestos detected	Moderate Risk Risk Score: 12 Friable Risk: Friable (5) Condition Risk: Satisfactory (1) Exposure Potential: Low (1) Labelling Risk: No (5)	
		Building 2, original building external, lew: 1, far southern end, all sides, soffits and eaves. Asbestos Cement (AC). Extent: 10-20m².	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref: 45-1353/25 Result: Asbestos detected	Low Risk Risk Score: 8 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Low (1) Labelling Risk: No (5)	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, new extension, external, all sides, wall lining. Fibrous Cement Sheeting (FCS). Extent: 50-100m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 451353/28-30 Result: No asbestos detected	N/A	
		Building 2, original building, external, north eastern side, fascia (all sides of original building presumed same). Fibrous Cement Sheeting (FCS). Extent: 10-20m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 25/8/2016]	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1363/31 Result: No asbestos detected	N/A	
		Building 2, original building, external, all sides, wall lining. Asbestos Cement (AC). Extent: 20-50m²	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1363/32, 34 Result: Asbestos detected	Low Risk Risk Score: 8 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Low (1) Labelling Risk: No (5)	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, original building, external, level 1, western and north eastern sides, soffit Asbestos Cement (AC). Extent: 20-50m².	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353/33-34 Result: Asbestos detected	Low Risk Risk Score: 8 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Low (1) Labelling Risk: No (5)	
		Building 2, new extension, internal, far eastern room, ceiling cavity, structural beam, sprayed limpet. Lagging / Limpet. Extent: 10-20m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/35 Result: No asbestos detected	N/A	
		Building 2, new extension, internal, ground floor, service cupboard adjacent to Tauhara room, angled ceiling . Fibrous Cement Sheeting (FCS). Extent: 1-10m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/36 Result: No asbestos detected	N/A	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
72 Lake Terrace	Asbestos	Building 2, original building, internal, adjacent communications room, hallway wall (level 1 vault room and conference room presumed same). Textured Paint. Extent: 1-10m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sana Robertson on 25/8/2016]	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/37 Result: No asbestos detected	N/A	
		Building 2, original building, internal, ground floor, paper and cleaners store room, floor cover. Vinyl Floor Tile. Extent: 1-10m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353/38 Result: No asbestos detected	N/A	
		Inaccessible or obscured areas may contain ACM. These may include but are not limited to: false ceilings, material within or beneath concrete, behind wall linings, beneath floor coverings, behind tiles, or within areas with limited access including subfloors, ceiling spaces and the like. Also some occurrences may have been 'presumed positive / negative' or 'presumed similar' to another occurrence. Description Unknown. Extent: Unknown.	Other	Presumed Positive	First Recorded: 24/8/2016 Reinspection Due: 24/8/2021 Labelled: No Removed: No Sample Tested: No Sample Ref.: N/A Result: N/A	N/A Risk Risk Score: N/A	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
9 Rifle Range Road	Asbestos	Building 1A, external, northern, eastern and southern sides, wall . Fibrous Cement Sheeting (FCS). Extent: 50-100m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353 / 1, 5, 7 Result: No asbestos detected	N/A	
		Building 1A, external, southern side, soil . AC Fragments. Extent: 1-10m².	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 2-3 Result: Asbestos detected	Moderate Risk Risk Score: 14 Friable Risk: Non-Friable (1) Condition Risk: Poor (5) Exposure Potential: Moderate (3) Labelling Risk: No (5)	
		Building 1A, external, all sides, base boarding . Fibrous Cement Sheeting (FCS). Extent: 50-100m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353 / 4 Result: No asbestos detected	N/A	
		Building 1A, external, western side, wall. Asbestos Cement (AC). Extent: 50-100m²	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 6 Result: Asbestos detected	Low Risk Risk Score: 10 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) Labelling Risk: No (5)	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
9 Rifle Range Road	Asbestos	Building 1A, external, southern and western sides, soffit Asbestos Cement (AC). Extent 50-100m²	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 8 Result: Asbestos detected	Low Risk Risk Score: 10 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) Labelling Risk: No (5)	
		Building 1A, external, eastern and northern sides, soffit and gable ends. Fibrous Cement Sheeting (FCS). Extent: 20-50m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353 / 9-10 Result: No asbestos detected	N/A	
		Building 1B, external, all sides, soffit. Asbestos Cement (AC). Extent: 50-100m²	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 11 Result: Asbestos detected	Low Risk Risk Score: 10 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) Labelling Risk: No (5)	

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Taupo County Council Building
Asbestos Register Report

Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
9 Rifle Range Road	Asbestos	Building 1C, external, central southern side, gable end and soffit (northern side, gable end and eastern and western sides, soffit presumed same). Asbestos Cement (AC). Extent: 50-100m². Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sane Robertson on 26/8/2016]	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 12 Result: Asbestos detected	Low Risk Risk Score: 10 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) Labelling Risk: No (5)	
		Building 1C, external, western side, wall . Fibrous Cement Sheeting (FCS). Extent: 50-100m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353 / 14 Result: No asbestos detected	N/A	
		Building 1C, external, far southern and eastern sides, wall. Asbestos Cement (AC). Extent: 50-100m².	Non-Friable	Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: Yes Sample Ref.: 45-1353 / 15 Result: Asbestos detected	Low Risk Risk Score: 10 Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) Labelling Risk: No (5)	

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Building	Category	Occurrence	Friability	Status	Occurrence Details	Risk Assessment	Image
9 Rifle Range Road	Asbestos	Building 1C, external, northern side, wall and soffit. Fibrous Cement Sheeting (FCS). Extent: 50-100m².	N/A	Negative	First Recorded: 23/8/2016 Reinspection Due: N/A Labelled: N/A Removed: N/A Sample Tested: Yes Sample Ref.: 45-1353 / 16, 13 Result: No asbestos detected	N/A	
		Inaccessible or obscured areas may contain ACM. These may include but are not limited to: false ceilings, material within or beneath concrete, behind wall linings, beneath floor coverings, behind tiles, electrical distribution boards or within areas with limited access including subfloors, ceiling spaces and the like. Also some occurrences may have been 'presumed positive / negative' or 'presumed similar' to another occurrence. Unknown. Extent Unknown. Notes: Confirm onsite prior to demolition or refurbishment and arrange further testing and clarification as required. [Added by: Sara Robertson on 23/8/2016]	Other	Presumed Positive	First Recorded: 23/8/2016 Reinspection Due: 23/8/2017 Labelled: No Removed: No Sample Tested: No Sample Ref.: N/A Result: N/A	N/A Risk Risk Score: 0	

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Taupo County Council Building Asbestos Register Report

About Your Register:

An Asbestos / Hazardous Materials Register will normally involve a walk-through inspection of the respective Building(s) by a Licensed Asbestos Assessor or a Competent Person. During the inspection, samples may be collected to confirm the presence / absence of hazardous materials. If collected, samples must be analysed by a NATA accredited laboratory.

Inaccessible Areas:

Areas which are inaccessible or materials which were not visible during the inspection must be 'Presumed to Contain Asbestos.' These may include:

- Materials which are obscured or covered by a second building fabric, such as a ceiling above a false ceiling, or a second concealed floor covering beneath the primary floor covering.
- Areas with limited / no safe access, such as subfloors, ceiling spaces, lift shafts, and some plant rooms.
- Air conditioning, heating, mechanical, electrical or other equipment with inaccessible components which require specialist knowledge.
- General exterior surfaces beneath ground cover and subsurface areas e.g. asbestos in fill/soil.
- Materials dumped, hidden, or otherwise placed in locations which one could not reasonably anticipate.
- Materials other than normal building fabric, materials in special purpose facilities and building materials that cannot be reasonably and safely assessed without assistance.

Labelling of Asbestos Containing Materials (ACM):

Labelling of ACM is an effective way to reduce the risk posed by inadvertent or accidental disturbance. The label should be clearly visible and of a suitable design to withstand deterioration by weather and UV light.

Unexpected Finds Protocol:

Most asbestos incidents happen when workers disturb asbestos without expecting it. These incidents are often UNCONTROLLED, around UNPROTECTED PERSONS, and not properly ACTED UPON. What should you do if you or another person disturbs potential ACM?

ISOLATE the area and set up a barricade to restrict access. Ideally a 10 metre exclusion zone is required as a minimum (anything less will require air monitoring to be undertaken by a NATA accredited company at the exclusion zone boundary).

SIGNPOST the exclusion zone. Place ASBESTOS WARNING SIGNS at all points of entry into the area. If you don't have asbestos warning signs, use danger flags or normal danger / warning signs in the short term.

CONTACT your preferred Asbestos Assessor or Occupational Hygienist. They will inspect the area and decide on the appropriate decontamination requirements.

AIR MONITORING is the only way to answer the question "Have I been exposed to asbestos?", and it MUST be conducted by a NATA accredited company.

REMOVAL of the contamination should be undertaken by a licensed asbestos removal contractor. Contact your Asbestos Assessor for advice on selecting a licensed removal contractor.

CLEARANCE is required by a Licensed Asbestos Assessor after the clean-up but before the area is reoccupied. No person is allowed back into the impacted area prior to Clearance being granted (except the contractor or the Asbestos Assessor).

Asbestos Management Plan (AMP):

It is the ultimate goal that all buildings be free of ACM, but until then any building with ACM must have an Asbestos Management Plan (AMP). The AMP is separate to the asbestos register in that it outlines the control measures and actions that are planned to effectively manage the identified ACM into the future.

Consult a Licensed Asbestos Assessor or Occupational Hygienist to create an AMP tailored to your site.

From: Chris Harrison [mailto:chris@ward-demolition.co.nz]

Sent: Wednesday, 25 January 2017 11:57 AM

To: Garreth Robinson <grobinson@taupo.govt.nz>

Subject: ACM report

Moring mate, please see attached report. I have added the info below to try and show you how to read these reports, basically, any/all asbestos if possible should be reduced to being low, that's low risk and low harm. This isn't always possible without removing the materials in question.

FIG.1 – Example of report line

Building 2, original building, external, all sides, wall lining. Asbestos Cement (AC). Extent:

20-50m². Non-Friable Positive First Recorded: 23/8/2016

Reinspection Due: 23/8/2017

Labelled: No Removed: No Sample Tested: Yes

Sample Ref.: 45-1353/32, 24

Result: Asbestos detected Moderate Risk (This refers to the Likelihood of release of ACM, and the word Moderate = Possible)

Risk Score: 10

Friable Risk: Non-Friable (1) Condition Risk: Satisfactory (1) Exposure Potential: Moderate (3) (This refers to the consequences of ACM release, the word Moderate in this case = Significant harm)

Labelling Risk: No (5)

DEFINITIONS:

Risk Assessment: The overall process of hazard identification, risk analysis, and risk mitigation. The purpose of a risk assessment is to identify critical hazards that require control and to allow informed decisions to be made about management actions.

- Hazard: Something that could cause harm.
- Risk: Likelihood of hazard occurring together with the severity of consequences if hazard were to occur.
- Likelihood:

1. Unlikely (Low)
2. Possible (Moderate)
3. Likely (High)

And for the purposes of this Risk Assessment is considered to apply to a nominal time period of say 12 months.

Consequences (Considered as most likely consequences):

1. Minor or no harm (Low)
2. Significant harm (Moderate)
3. Severe Injury or fatality (High)

ARO ASBESTOS REGISTER:

ARO Asbestos Registers' risk assessment is based on the Likelihood X Consequences approach. An asbestos occurrence will score Low, Moderate or High based on the likelihood of the consequences occurring.

For example: Whether the ACM is Non friable or Friable and its exposure potential. Friable asbestos will have higher consequences and therefore higher risk, especially if it is inside.

We can reduce the risk by reducing either the likelihood or consequences, or both. However this is not always practicable.

As a general rule, everything should be reduced to low risk. In order to do this, controls which will reduce the likelihood and consequences need to be implemented. We do this using the hierarchy of controls.

For instance in terms of the contaminated soil behind the Prefab room building, controls were implemented to reduce the risk, they were to excavate and remove. Non-friable asbestos cladding, again, removed therefore removing the likelihood of harm and release.

I hope this helps.

I will be back down there on the9th/10th February if you want to have a catch up on site. I would also like to have a look at the demolition works you require in the office area.

Regards

Chris Harrison

Operations Manager, HSE Manager

Ward Demolition Ltd I Salvage I Quarries I Heavy Haulage Management

P.O Box 12720 Penrose, Auckland 1642 New Zealand

M +64 21 534 094

DDI +64 9 622 3740

www.ward-demolition.co.nz

32 Harington Street
PO Box 903, Tauranga 3140, New Zealand
T: +64 7 578 0896 // F: +64 7 578 2968
E: info@beca.com // www.beca.com

Consents and Regulatory Manager
David Greaves
Taupo District Council
72 Lake Terrace
Taupo Town Centre 3330

13 August 2012

Dear David

Revised Taupo District Council Building – 72 Lake Terrace, Taupo – IEP Seismic Assessment Report

We have completed the Initial Evaluation Procedure (IEP) assessment of the Taupo District Council office building. The results of our review are as noted below.

1 Executive Summary

Based on the IEP method, the Taupo District Council's office building has an assessed score of 50%*NBS* if it is assumed that an importance level two (IL2) applies, ie it is a normal building. This score corresponds to a C grade building as defined by the New Zealand Society for Earthquake Engineering (NZSEE). This is more than the minimum threshold for earthquake prone buildings (33%*NBS*) but less than the threshold for earthquake risk buildings (67%*NBS*) as recommended by NZSEE. This could be regarded as exposing the occupants to a medium seismic risk.

We have been advised that the building should also be assessed as an importance level four (IL4) building, ie containing post-disaster facilitates. If the building is considered an IL4 building, the building would achieve 28%*NBS*.

The assessment penalised the building for the age and being founded on potentially liquefiable soils. However, the penalty for liquefaction has been recovered by a compensating higher *F*-factor as it is considered that liquefaction, if it should occur is not likely to be a life safety issue for this building.

A complete set of structural drawings for the original building was not available so a site inspection was carried out on 20 July to inspect critical elements of the building. This included inspecting the connections between the concrete shear walls and the timber floor diaphragm, and the connection of the spandrel wall panels to the 1968 structure. The stair connections for the stairs in the 1984 extension, and the original 1968 building were also inspected.

Based on the assessment we have carried out we recommend:

- Opening of the linings, etc, at the interfaces between the various sections of the building, so that the connection between various structures can be investigated
- If the building remains earthquake prone or earthquake risk, we recommend that a detailed assessment be carried out to confirm the performance of the building with more certainty.

  Although, the building comprises several parts, the current assessment is for the original 1968-section as other more recent parts are expected to have a higher seismic capacity. If the various

parts are not well tied together there is a potential for pounding between the parts resulting in local damage at the interfaces. However, considering the similar height of the different parts of the building, this is not considered a critical issue.

2 Introduction

Taupo District Council commissioned Beca Carter Hollings & Ferner Ltd (Beca) to undertake an IEP assessment for its main building whilst also providing background information on the Initial Evaluation Process and its limitations. This report has been prepared in response to this request.

3 Building Description

The Council's main building is actually a group of buildings constructed over time. The first building on the site was originally constructed in 1968. The other parts were later added in 1984, 1989, 2004 and 2011 (Refer to Figure 1).

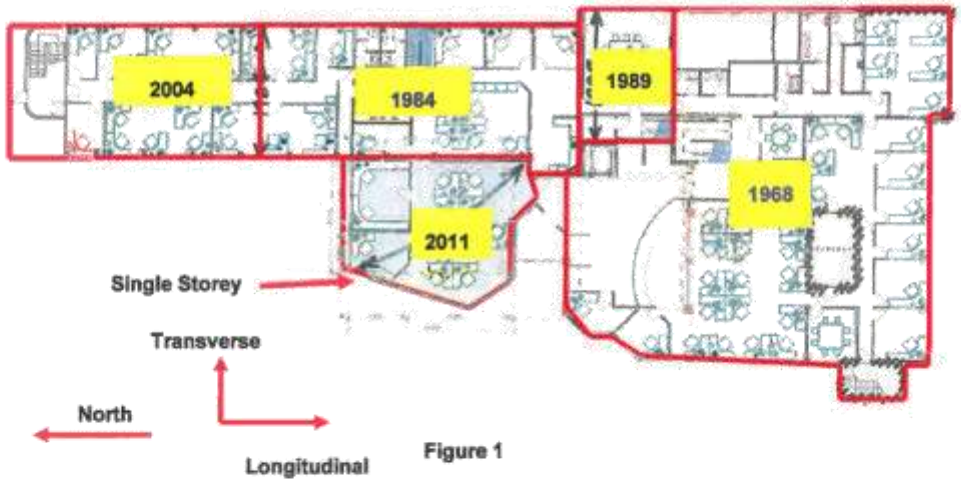


Figure 1

3.1 1968 Building

The original building is a two storey timber framed structure supported on shallow foundations. The timber first floor is supported on steel beams and the light metal roof is supported on timber purlins. The external walls consist of sill height concrete spandrel panels. Lateral loads are resisted by concrete shear walls. (Refer to Figure 2). For all available drawings refer to Appendix B.

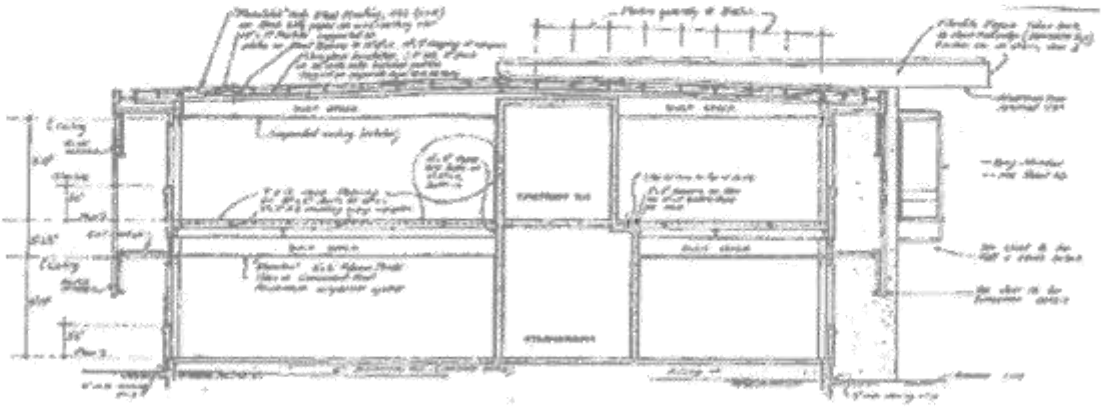


Figure 2

3.2 1984 Addition

The 1984 addition consists of a two-storey extension to the North. Refer to Figure 1. For all available drawings refer to Appendix C. The roof of this part consists of lightweight metal roofing on timber purlins and moment resisting steel trussed portals. The steel posts are supported on steel portal frames which rest on shallow foundations. The infill walls are timber frames on both floors.

Lateral loads in this building are resisted by trussed portals at the upper level and by steel portal frames at the lower level in the short direction. Refer to Figure 3 for a cross section.

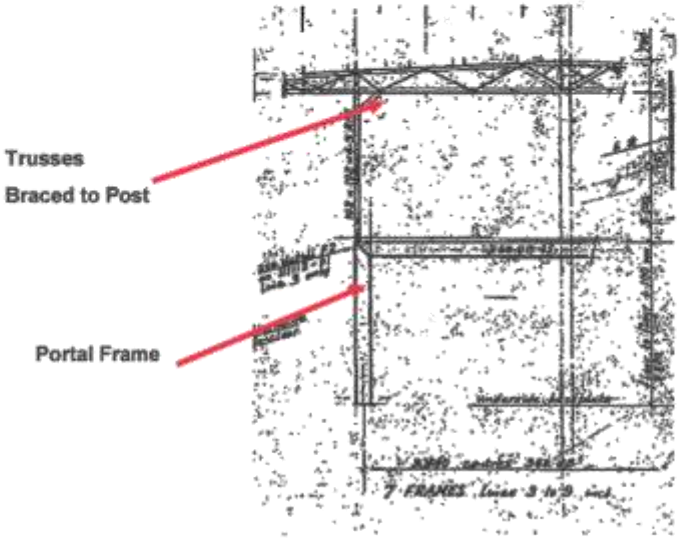


Figure 3

In the longitudinal direction, the loads have been assumed to be resisted by timber framed walls (as there are no other details in the drawings) to the first floor level. The timber floor is laterally supported by steel cross angle bracing and two reinforced concrete shear walls. The shear walls are founded on shallow foundations.

3.3 1989 Addition

The addition in 1989 was a small timber framed infill structure inserted between the 1968 and 1984 buildings. Refer to Figure 1. For all available drawings of this part of the building refer to Appendix D.

3.4 2004, 2011 Addition

The additions in 2011 consisted of a single storey extension to the west and a two storey extension to the north of the 1984-building. Refer to Figure 1. For all available drawings of this addition refer to Appendix E. The single storey building consists of lightweight roofing on steel purlins and steel portal frames. The lateral loads are resisted by portal frames in both directions.

The two storey extension in 2004 consists of lightweight roofing on timber purlins and steel portal frames on shallow foundations. The lateral loads are resisted by portal frames in both directions.

A small part of the upper floor of the building constructed in 2000 extends over the driveway on the north eastern end of the building.

There is a lift shaft at the northern end which consists of steel beams and posts braced to the foundations. Refer to Section 2-2 on Drawing 0212/PM/6 in Appendix E.

4 Background to the IEP Process

The IEP procedure was developed by the New Zealand Society of Earthquake Engineers (NZSEE) in 2006 as a tool to assign a percentage of New Building Standard (*%NBS*) score and associated grade to a building to enable an initial coarse screening of existing buildings.

The IEP process enables territorial authorities, building owners and managers to review their building stock as part of an overall risk management process.

Characteristics of the IEP process are:

- It tends to be somewhat conservative identifying some buildings as earthquake prone, or having a lower *%NBS* score, which subsequent detailed investigation may indicate is less than actual performance. However, there will be exceptions, particularly when critical structural weaknesses (CSWs) are present that cannot be recognised from what is largely a visual assessment of the exterior of the building.
- It can be undertaken with variable levels of available information, eg exterior only inspection, structural drawings available or not, interior inspection, etc. The more information available the more representative the IEP result is likely to be.
- It is a first-stage review. Buildings, or specific issues which the IEP process flags as being problematic or as potentially critical structural weaknesses, need further detailed investigation and evaluation.
- It assumes that the buildings have been designed and built in accordance with the building standard and good practice current at the time. In some instances, a building may include design features ahead of its time - leading to better than predicted performance. Conversely, some unidentified design or construction issues not picked up by the IEP process may result in the building performing not as well as predicted.
- It is a largely qualitative process, and assumed to be undertaken by an experienced engineer. It involves considerable knowledge of the earthquake behaviour of buildings, and judgement as to key attributes and their effect on building performance. Consequently, it is possible that the *%NBS* derived for a building by independent experienced engineers may differ.
- An IEP may over-penalise some apparently critical features which could have been satisfactorily taken into account in the design.
- Experience to date is that the IEP is a useful tool to identify potential issues and expected overall performance of a building in an earthquake.
- An IEP does not take into account the seismic performance of non-structural items such as ceiling, plant, services or glazing.

The process and the associated %*NBS* and grade should be considered as only indicative of the building's compliance with current code requirements. A more detailed investigation and analysis of the building will typically be required to provide a more definitive assessment. An IEP score above 33%*NBS* should be considered sufficient to classify the building as not earthquake prone.

5 Methodology

The methodology we have used for our IEP assessment is as follows:

- A review of structural and architectural drawings obtained from the Taupo District Council. Refer Appendices B, C, D and E.
- A site visual inspection conducted on the 8th June 2012 which confirmed the nature of the building and its relationship to surrounding buildings.
- The inspection was limited to areas where safe ready access was available to:
  - Assess the general consistency of building information on drawings with the actual building.
  - Identify potential critical structural weaknesses, or irregularities able to be observed.
  - Identify, where possible, items of significant deterioration which might affect the %*NBS* assessment.
- A site visual inspection conducted on 20 July 2012 to inspect the connections in the 1968-building, as this information was not available on the drawings. This involved removing ceiling tiles at several locations, under the first floor and under the roof.

6 IEP Assessment Results

Our IEP assessment of the main building indicates a score of 50%*NBS*. This corresponds to a Grade C building, as defined by the New Zealand Society for Earthquake Engineering. The building is therefore not earthquake-prone as the %*NBS* is above the minimum threshold for earthquake-prone buildings (33%*NBS*) as defined by the New Zealand Building Act 2004. However, the building is considered a potential earthquake-risk as the %*NBS* is less than the threshold for earthquake-risk buildings (67%*NBS*) as defined by NZSEE. The use of "potential" to describe the results of the assessment reflects the possibility that a detailed seismic assessment may provide a different score.

Notwithstanding the assessed performance of the main lateral load resisting system, we have observed several potential local weaknesses that would require more detailed examination to quantify their effect on the overall score. These are described in Section 6.

The key assumptions made during our assessment of Taupo District Council building were as follows:

IEP Item	Assumption	Justification
Date of Building Design	1968	The original building was designed in 1968. Refer drawings in Appendix B.
Soil Type	D	The soil type for this site has been conservatively assumed as

		Class D.
Building Importance Level	2	The building use, size and occupancy level is typical for a structure of Importance Level 2.
Ductility of Structure	μ=2	The lateral loads are resisted by concrete shear walls.
Plan Irregularity, Factor A	1	The timber diaphragm is considered to be flexible and spans between the concrete shear walls. The walls are regularly distributed.
Vertical Irregularity, Factor B	1	The building is vertically regular.
Short Columns, Factor C	1	We have not identified the presence of any critical short columns.
Pounding, Factor D	1	In the longitudinal direction there is potential for pounding. However, considering the similar height of the buildings, it is not considered to be a critical issue.
Site Characteristics, Factor E	0.7	Soil in the area is assumed to be potentially liquefiable considering its close proximity to the lake.
Other factors, Factor F	1.5	Considering liquefaction not a life safety issue, this penalty has been compensated for by providing higher F-factor.

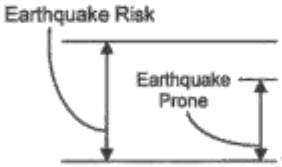
Refer to the attached IEP assessment (Appendix A).

7 IEP Grades and Relative Risk

The table below indicates the relative risk of a building's strength being exceeded by an earthquake, compared to that of a new building (ie 100%*NBS*).

Table 1: Building Grading System for Earthquake Risk

Percentage of New Building Standard (%NBS)	Letter Grade	Relative Risk (approximate)	Risk Level
>100	A+	<1 times	Low
80 – 100	A	1 – 2 times	Low
67 – 80	B	2 – 5 times	Low
33 – 67	C	5 – 10 times	Medium
20 – 33	D	10 – 25 times	High
<20	E	>25 times	High



Based on the IEP method, the Taupo District Council has an assessed score of 50%*NBS*. This corresponds to a Grade C building, as defined by the New Zealand Society for Earthquake Engineering (NZSEE), which could be regarded as exposing the occupants to a risk of 5-10 times the risk of a new building, broadly described as a "medium risk".

8 General Comments on Building Construction

The Taupo District Council office building is a two storey timber framed structure with light roof and timber first storey supported on shallow foundations. The external walls consist of sill height spandrel panels. Lateral loads are resisted by concrete shear walls. Drawings of connection details from timber floor to concrete walls are not available.

In general, the building was penalised because of the age of the building and being founded on potentially liquefiable soils. However, penalty for liquefaction has been compensated for by a higher F-factor as we consider that liquefaction, should it occur, is not a life safety issue for this building.

A complete set of structural drawings for the original building were not available so a site inspection was carried out on 20 July to inspect critical elements of the building. This included inspecting the connections between the concrete shear walls and the timber floor diaphragm, and the connection for the spandrel wall panels to the structure. These connections were deemed to be satisfactory to transfer the seismic loads to the lateral load resisting systems.

The conservative assumption that the soil is type D could be investigated further. If this reveals the soil is better than assumed in the IEP an improved score may result. It is possible there may be borehole data available for this site in the immediate vicinity which could confirm the subsoil type. In the context of our limited scope for this IEP we have not sought to identify whether these records are available.

9 Assessment of Egress Stairs and Egress Routes

One of the important learnings from the Christchurch earthquake is that stairs can be a vulnerable element and these should be assessed during the seismic assessment process. In particular, concern has been raised around the poor performance of stairs and their supports. The risk presented by heavy building appendages next to public access ways, such as old masonry parapets and canopies also is an area of potential concern.

Accordingly, we have briefly assessed the building to determine whether the above hazards are present and likely to become critical at a performance level lower than that achieved by the overall building and connections to the floor and the concrete shear walls.

The details of the stairs in the original building were not available.

The details for the stair stringers and their connections for the southern stairs in the 1984-addition are available and were reviewed. They are integral with the steel floor entrance of the building and to the landing of the original building. The connection to the original building was inspected (20 July 2012) and was found to be detailed to allow movement in the transverse direction.

No details for the stairs located at the north eastern end of the 1984 extension are available. The details for the stairs in the lift shaft were reviewed and were found to be detailed to allow movement along the stair.

10 Seismic Restraint of Non – Structural Items

The recent Christchurch earthquakes have demonstrated that even when a building structure performed well, the safety of people could be put at risk due to non-structural items such as tall or heavy furniture or ceilings, in-ceiling services and plant.

The inspections we have undertaken for this assessment have been focussed on the building structure and have not taken into account the likely performance of these items. We have also not checked whether tall or heavy furniture has been seismically restrained.

We recommend that an assessment of non-structural elements such as those listed above be completed for the building.

11 Conclusions

Our IEP assessment for Council's office building indicates a score of 50%*NBS* if the building is considered an importance level two (IL2) building. This corresponds to a C grade building as defined by the New Zealand Society for Earthquake Engineering. This is more than the minimum threshold for earthquake prone buildings (33%*NBS*) but less than the threshold for earthquake risk buildings (67%*NBS*). This could be regarded as exposing the occupants to a medium seismic risk.

We have been advised that the building should also be assessed against importance level four (IL4) criteria, ie assuming it is required for post-disaster activities. If the building is considered an IL4 building, the building would achieve 28%*NBS* when considered against the higher standard.

Notwithstanding the assessed performance of the main lateral load resisting system, we have observed several potential local weaknesses that would require more detailed examination to quantify their effect on the overall score.

We recommend:

- Opening of the linings, etc, at the interfaces between the various sections of the building, so that the connection between various structures can be investigated and the current score adjusted appropriately.
- If the building remains earthquake prone or earthquake risk, we recommend that a detailed assessment be carried out to confirm the performance of this building with more certainty.

Although, the building comprises several parts, the current assessment is based on the original 1964-building as other parts are expected to have higher seismic capacity than this. If the various parts are not well tied together there is a potential for pounding parts resulting in local damage at the interfaces. However, considering the similar height of the different parts of the building, this is not considered a critical issue.

We trust this letter and IEP assessment meets your current requirements. We would be pleased to discuss further with you any issues raised in this report.

12 Explanatory Notes

- This report has been prepared by Beca at the request of our Client and is exclusively for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Beca accepts no responsibility or liability to any third party for any loss or damage whatsoever arising out of the use of or reliance on this report by that party or any party other than our Client.
- Our inspection was limited to a high level visual examination of the buildings where safe and ready access existed at the time, and we have not undertaken any intrusive inspections or testing. This report is necessarily limited in that respect and does not address any matter that is not discoverable from such an inspection, including any damage or defect in inaccessible places and/or latent defects. Beca is not able to give any warranty or guarantee that all possible damage, defects, conditions or qualities have been identified. The work done by Beca and the advice given is therefore on a reasonable endeavours basis.
- The building assessment is necessarily reliant on the accuracy, currency and completeness of the information provided to us, including the structural drawings, and we have not sought to independently verify any of the information provided.
- The Initial Seismic Building Assessment is based on the Initial Evaluation Procedure (IEP) methodology as detailed in the New Zealand Society of Earthquake Engineer's handbook "Assessment and Improvement of the Structural Performance of Buildings in Earthquake." This procedure provides an assessment of the likely performance of the building compared with a new building designed to the current code (% new building standard). Except to the extent that Beca expressly indicates in the report, no assessment has been made to determine whether or not the building complies with the building codes or other relevant codes, standards, guidelines, legislation, plans, etc.

We look forward to your further instruction.

Yours sincerely
Krish Shekaran
Associate – Structural Engineering

on behalf of
Beca Carter Hollings & Ferner Ltd
Direct Dial: +64-7-577 1132
Email: krish.shekaran@beca.com

Attachments

1 - IEP Report
2 - Original Building – Architectural Drawings Only
3 - Extensions in 1984 – Architectural & Structural Drawings
4 - Alterations in 1989
5 - Single Storey Addition & Two Storey Extension in 2000 – Architectural & Structural Drawings
6 - Photos from 20 July Site Visit – 1968 Building Connections

Attachment 1

IEP Report

Printed 13/06/2012

Spreadsheet Version 1.0
NZS-6990253-4

Initial Evaluation Procedure (IEP) Assessment
(Appendix to IEP Seismic Assessment Report)

Table IEP-1 Initial Evaluation Procedure Step 1 Page 1

(Refer Table IEP - 2 for Step 2; Table IEP - 3 for Step 3, Table IEP - 4 for Steps 4, 5 and 6 & also Beca Guidelines & NZSEE Guidelines)

Client:	Taupo District Council	Job No:	5275229
Street Number & Name:	72 Lake Terrace, Taupo	By:	Krish Sheakran
AKA:		Date of site visit:	8/06/2012
Name of building:		Revision no.	1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

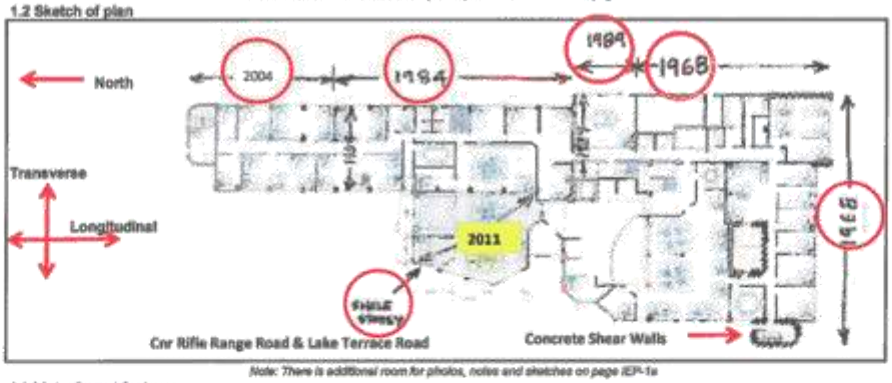
Elevation from Lake Terrace

Elevation from Rifle Range Road

NOTE: THERE ARE MORE PHOTOS ON PAGE IEP-1a ATTACHED

Note: There is additional room for photos, notes and sketches on page IEP-1a

1.2 Sketch of plan



Note: There is additional room for photos, notes and sketches on page IEP-1a

1.3 List relevant features

The building was originally constructed in 1968 with alterations done to it in 1984, 1989 2004 and 2011. The original building is a two storey timber framed building with light roof and timber first floor supported on shallow foundations. The internal walls consist of sill height spandrel panels. Lateral loads are resisted by concrete shear walls. Drawings of connection details from timber floor to concrete walls are not available. This building governs the IEP in transverse direction. For descriptions of the other buildings refer to the report.

1.4 Note information sources

	Tick as appropriate
Visual Inspection of Exterior	☑
Visual Inspection of Interior	☑
Drawings (note type)	☑
Specifications	☐
Geotechnical Reports	☐
Other (list)	☐

Drawings refer to appendicies in the Report.

Disclaimer: *This initial assessment has been carried out solely as a preliminary seismic assessment of the building following the procedure set out in the New Zealand Society for Earthquake Engineering document "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes, June 2006". This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgments based on them, have not been undertaken, and they may lead to a different result or seismic grade.*

Printed 18/06/2012

Spreadsheet Version 1.9
NZ1-5960253-4

Table IEP-1a Additional Photos and Sketches Page 1a

(Refer Table IEP - 2 for Step 2; Table IEP - 3 for Step 3, Table IEP - 4 for Steps 4, 5 and 6)

Client:	Taupo District Council	Job No:	5275239
Street Number & Name:	72 Lake Terrace, Taupo	By:	Krish Sheakran
AKA:		Date of site visit:	8/06/2012
Name of building:		Revision no.	1

Add any additional photographs, notes or sketches required below:

Note: print this page separately

Disclaimer: This initial assessment has been carried out solely as a preliminary seismic assessment of the building following the procedure set out in the New Zealand Society for Earthquake Engineering document "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes, June 2006". This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgments based on them, have not been undertaken, and they may lead to a different result or seismic grade.

Printed 18/06/2012

Spreadsheet Version 1.9
NZ1-5990253-4

Table IEP-2 Initial Evaluation Procedure Step 2 Page 2

(Refer Table IEP - 1 for Step 1; Table IEP - 3 for Step 3; Table IEP - 4 for Steps 4, 5 and 6)

Client:	Taupo District Council	Job No:	5275229
Street Number & Name:	72 Lake Terrace, Taupo	By:	Krish Sheakran
AKA:		Date of site visit:	8/06/2012
Name of building:		Revision no.	1

Step 2 - Determination of $(\%NBS)_b$

2.1 Determine nominal (%NBS) = $(\%NBS)_{nom}$

(Baseline (%NBS) for particular building - refer Section B5)

a) Date of Design and Seismic Zone

Date of Design: *(or date of code strengthened to)*
- ○ Pre 1935
- ○ 1935-1965
- ◉ 1965-1976
- ○ 1976-1992
- ○ 1992-2004

Strengthening
☐ Tick if building has been strengthened
If strengthened enter code used design date.
See Note 4 below also

Building Category: Others

Seismic Zone: Zone A

b) Soil Type

From NZS1170.5:2004, Cl 3.1.3 : NZS1170.5:2004
- ○ A or B Rock
- ○ C Shallow Soil
- ◉ D Soft Soil
- ○ E Very Soft Soil

From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 only and only if known) NZS4203:1992
- ◉ Rigid
- ○ Intermediate or Not Known

c) Estimate Period, T

Comment:

		Longitudinal	Transverse
h_n =		7	7 m
A_c =		1.00	1.00 m^2
Moment Resisting Concrete Frames:	$T = 0.09h_n^{0.75}$	○ MRCF	○ MRCF
Moment Resisting Steel Frames:	$T = 0.14h_n^{0.75}$	○ MRSF	○ MRSF
Eccentrically Braced Steel Frames:	$T = 0.08h_n^{0.75}$	○ EBSF	○ EBSF
All Other Frame Structures:	$T = 0.08h_n^{0.75}$	○ Others	○ Others
Concrete Shear Walls	$T = 0.06h_n^{0.75}/A_c^{0.5}$	○ CW	○ CW
Masonry Shear Walls:	$T \leq 0.4$sec	○ MSW	○ MSW
User Defined (input Period):		◉ Defined	◉ Defined
		0.40	0.40 Seconds

Where h_n = height in m from the base of the structure to the uppermost seismic weight or mass.

d) $(\%NBS)_{nom}$ determined from Figure 3.3

Longitudinal:	6.00%
Transverse:	6.00%

Note 1: For buildings designed prior to 1965 and known to be designed as public buildings in accordance with the code of the time, multiply $(\%NBS)_{nom}$ by 1.25.
For buildings designed 1965 - 1976 and known to be designed as public buildings in accordance with the code of the time, multiply $(\%NBS)_{nom}$ by 1.33 - Zone A, or by 1.2 - Zone B — N/A

Note 2: For reinforced concrete buildings designed between 1976-84 multiply $(\%NBS)_{nom}$ by 1.2 — N/A

Note 3: For buildings designed prior to 1935 multiply $(\%NBS)_{nom}$ by 0.8 except for Wellington where the factor may be taken as 1. — N/A

Note 4: If the building is known to have been strengthened, enter the percentage of the code selected in 2.1 a) that the building has been strengthened to for each direction.

	Longitudinal Direction
	Transverse Direction

	(%NBS)nom
Longitudinal:	6.00%
Transverse:	6.00%

(Scaled as per Notes 1 to 4)

Continued over page

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Table IEP-2 Initial Evaluation Procedure Step 2 continued Page 3

2.2 Near Fault Scaling Factor, Factor A

If $T \leq 1.5$sec, Factor A = 1

a) **Near Fault Factor, *N(T,D)*** (from NZS1170.5:2004, Cl 3.1.6) — Longitudinal: 1; Transverse: 1

b) **Near Fault Scaling Factor** = 1/N(T,D)

Factor A — Longitudinal: 1.00; Transverse: 1.00

2.3 Hazard Scaling Factor, Factor B

a) **Hazard Factor, Z, *for site*** (from NZS1170.5:2004, Table 3.3) — Site Area: Tauranga; Z = 0.2; Z_{1992} = 1.2

b) **Hazard Scaling Factor**
For pre 1992 = 1/Z
For 1992 onwards = Z_{1992}/Z

(Where Z_{1992} is the NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))

Factor B: 5.00

2.4 Return Period Scaling Factor, Factor C

a) **Building Importance Level** (from NZS1170.0:2004, Table 3.1 and 3.2) — *Choose Importance Level*: C 1 C 2 C 3 C 4

Comment:

b) **Return Period Scaling Factor from accompanying Table 3.1**

Factor C: 1.00

2.5 Ductility Scaling Factor, D

a) **Assessed Ductility of Existing Structure, μ** (shall be less than maximum given in accompanying Table 3.2) — μ = 2.00 Longitudinal Direction; μ = 2.00 Transverse Direction; max = 2

Comment:

b) **Ductility Scaling Factor**

		Longitudinal	Transverse
For pre 1976	=	k_μ	k_μ
	=	1.57	1.57
For 1976 onwards	=	1	1

(where k_μ is NZS1170.5:2004 Ductility Factor, from accompanying Table 3.3)

Factor D — Longitudinal: 1.57; Transverse: 1.57

2.6 Structural Performance Scaling Factor, Factor E

a) **Structural Performance Factor, S_p from accompanying Figure 3.4** — S_p = 0.7 Longitudinal Direction; S_p = 0.7 Transverse Direction

b) **Structural Performance Scaling Factor** = $1/S_p$

Factor E — Longitudinal: 1.43; Transverse: 1.43

2.7 Baseline %NBS for Building, $(\%NBS)_b$

(equals $(\%NSB)_{new}$ x A x B x C x D x E)

Longitudinal : 67%

Transverse : 67%

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HZ1-5960293-4

Table IEP-3 Initial Evaluation Procedure Step 3 Page 4

(Refer Table IEP - 1 for Step 1; Table IEP - 2 for Step 2; Table IEP - 4 for Steps 4, 5 and 6)

Client:	Taupo District Council	Job No:	5275229
Steet Number & Name:	73 Lake Terrace, Taupo	By:	Kriah Shaakiran
AKA:		Date of site visit:	8/06/2012
Name of Building:		Revision no.	1

a) Longitudinal Direction

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

Critical Structural Weakness	Effect on Structural Performance (Choose a value - Do not interpolate)			Building Score
3.1 Plan Irregularity				
Effect on Structural Performance	○ Severe	○ Significant	◉ Insignificant	Factor A: 1.0
Comment				
3.2 Vertical Irregularity				
Effect on Structural Performance	○ Severe	○ Significant	◉ Insignificant	Factor B: 1.0
Comment				
3.3 Short Columns				
Effect on Structural Performance	○ Severe	○ Significant	◉ Insignificant	Factor C: 1.0
Comment				

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or =1.0 if no potential for pounding)

a) Factor D1: - Pounding Effect

Select appropriate value from Table

Note:
Values given assume the building has a frame structure. For stiff buildings (eg with shear walls), the effect of pounding may be reduced by taking the co-efficient to the right of the value applicable to frame buildings.

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 0.7	○ 0.8	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment:

b) Factor D2: - Height Difference Effect

Select appropriate value from Table

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe 0<Sep<.005H	Significant .005<Sep<.01H	Insignificant Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	◉ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.8	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	○ 1

Comment:

Factor D: 1.0

(Set D = lesser of D1 and D2 or..
set D = 1.0 if no prospect of pounding)

3.5 Site Characteristics - *(Stability, landslide threat, liquefaction etc)*

Severe	Significant	Insignificant	
○ 0.5max	◉ 0.7	○ 1	Factor E: 0.7

Comment: Liquefaction potential

3.6 Other Factors

For ≤ 3 storeys - Maximum value 3.5, otherwise - Maximum value 1.5. No minimum. Factor F: 1.0

Record rationale for choice of Factor F:

As connection details were not available we chose F Factor as 1

3.7 Performance Achievement Ratio (PAR) (equals A x B x C x D x E x F)

PAR (Longitudinal): 0.70

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b) Transverse Direction

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Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

Critical Structural Weakness	Effect on Structural Performance (Choose a value - Do not interpolate)	Building Score
3.1 Plan Irregularity	○ Severe ○ Significant ◉ Insignificant	Factor A: 1.0
Effect on Structural Performance		
Comment		
3.2 Vertical Irregularity	○ Severe ○ Significant ◉ Insignificant	Factor B: 1.0
Effect on Structural Performance		
Comment		
3.3 Short Columns	○ Severe ○ Significant ◉ Insignificant	Factor C: 1.0
Effect on Structural Performance		
Comment		

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or =1.0 if no potential for pounding)

a) Factor D1: - Pounding Effect
Select appropriate value from Table

Note:
Values given assume the building has a frame structure. For stiff buildings (eg with shear walls), the effect of pounding may be reduced by taking the co-efficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1

Table for Selection of Factor D1	Separation	Severe 0<Sep<.005H	Significant .005<Sep<.01H	Insignificant Sep>.01H
Alignment of Floors within 20% of Storey Height		○ 0.7	○ 0.8	◉ 1
Alignment of Floors not within 20% of Storey Height		○ 0.4	○ 0.7	○ 0.8

Comment:

b) Factor D2: - Height Difference Effect
Select appropriate value from Table

Factor D2 For Transverse Direction: 1

Table for Selection of Factor D2	Severe 0<Sep<.005H	Significant .005<Sep<.01H	Insignificant Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	◉ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	○ 1

Comment:

Factor D: 1.0
(Set D = lesser of D1 and D2 or..
set D = 1.0 if no prospect of pounding)

3.5 Site Characteristics - *(Stability, landslide threat, liquefaction etc)*

Severe	Significant	Insignificant	
○ 0.5max	◉ 0.7	○ 1	Factor E: 0.7

Comment: Same as L-div

3.6 Other Factors

For ≤ 3 storeys - Maximum value 2.5, otherwise - Maximum value 1.5. No minimum.

Factor F: 1.0

Record rationale for choice of Factor F:

3.7 Performance Achievement Ratio (PAR)
(equals A x B x C x D x E x F)

PAR (Transverse): 0.70

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NZ1-5990253-4

Table IEP- 4 Initial Evaluation Procedure Steps 4, 5 and 6 Page 6

(Refer Table IEP - 1 for Step 1; Table IEP - 2 for Step 2; Table IEP - 3 for Step 3)

Client:	Taupo District Council	Job No:	5275229
Street Number & Name:	72 Lake Terrace, Taupo	By:	Krish Sheakran
AKA:		Date of site visit:	5/06/2012
Name of building:		Revision no.	1

Step 4 - Percentage of New Building Standard (%NBS)

	Longitudinal	Transverse
4.1 Assessed Baseline (%NBS)$_b$ (from Table IEP - 1)	67%	67%
4.2 Performance Achievement Ratio (PAR) (from Table IEP - 2)	0.70	0.70
4.3 PAR x Baseline (%NBS)b	47%	47%
4.4 Percentage New Building Standard (%NBS) (Use lower of two values from Step 3.3)		47%

Step 5 - Initially evaluated as Potentially Earthquake Prone? %NBS ≤ 33 — NO
(Mark as appropriate)

Step 6 - Initially evaluated as Potentially Earthquake Risk? %NBS < 67 — YES
(Mark as appropriate)

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade: C

Evaluation Confirmed

on behalf of Beca by _____ Signature

_____ Name

_____ CPEng. No

Relationship between Grade and %NBS:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	80 to 67	67 to 33	33 to 20	< 20

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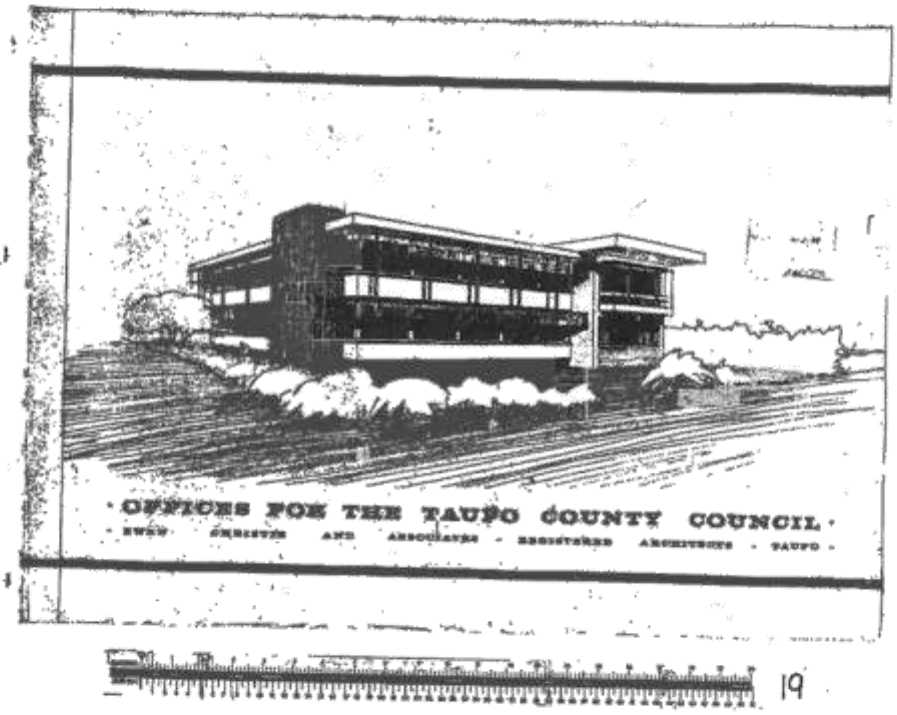
Attachment 2

Original Building – Architectural Drawings Only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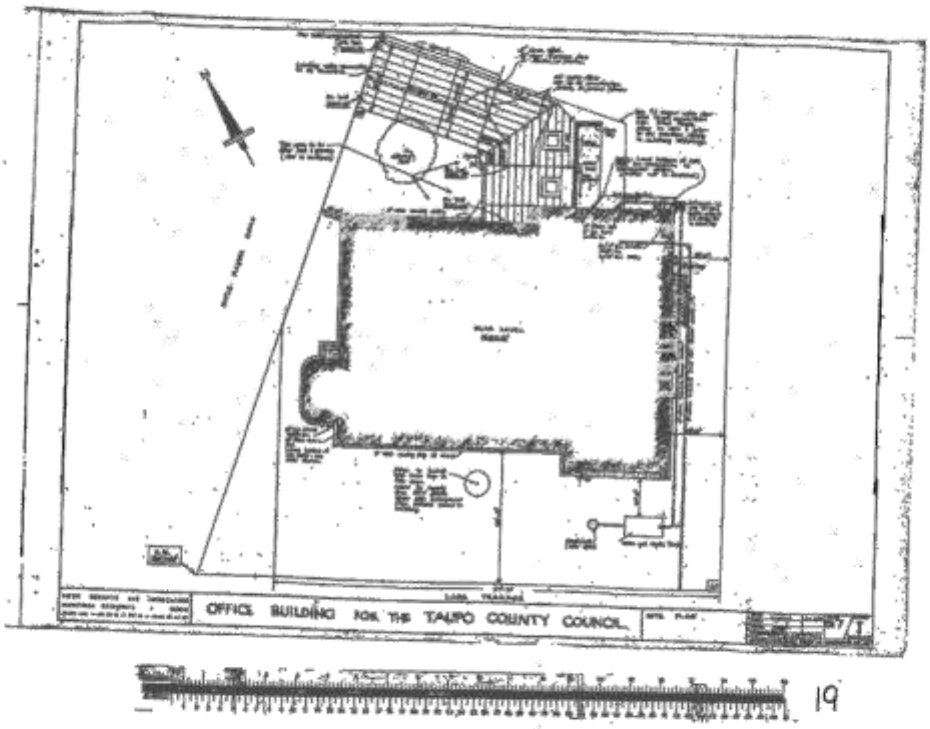
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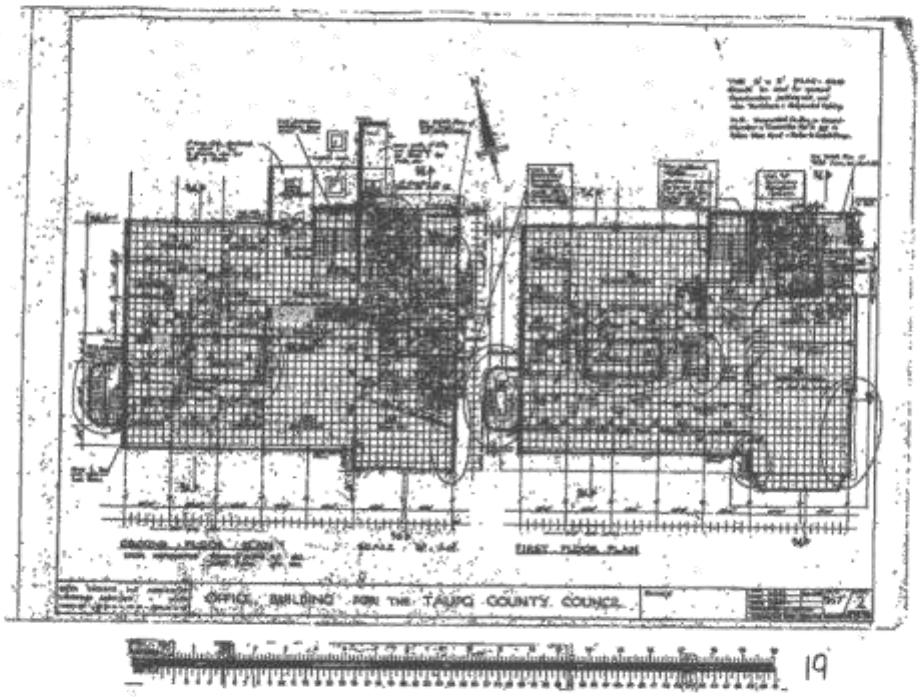
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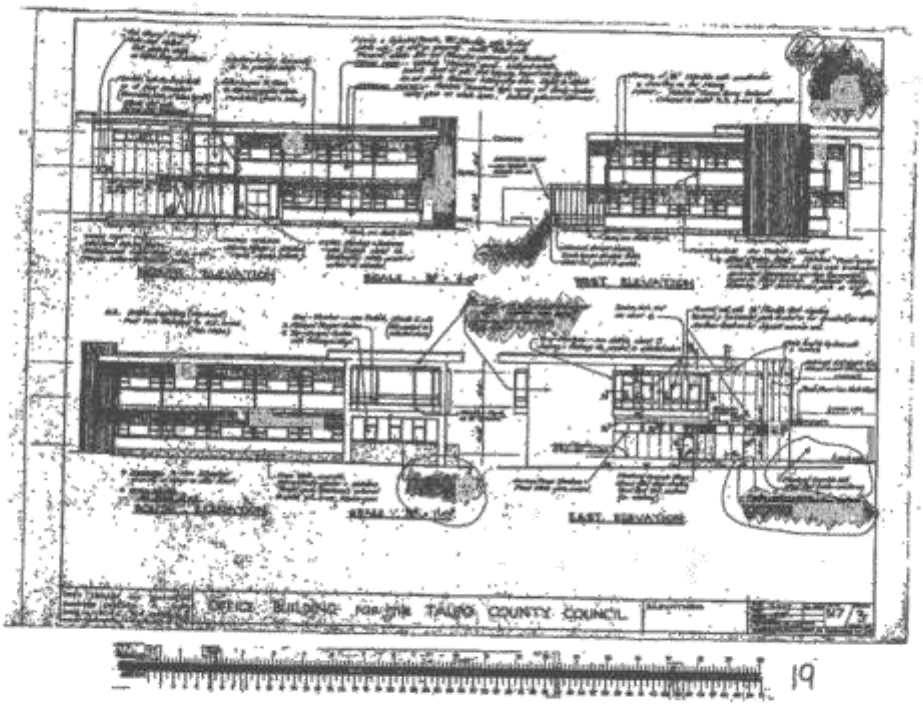
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EAST ELEVATION
OFFICE BUILDING FOR THE TAUPO COUNTY COUNCIL
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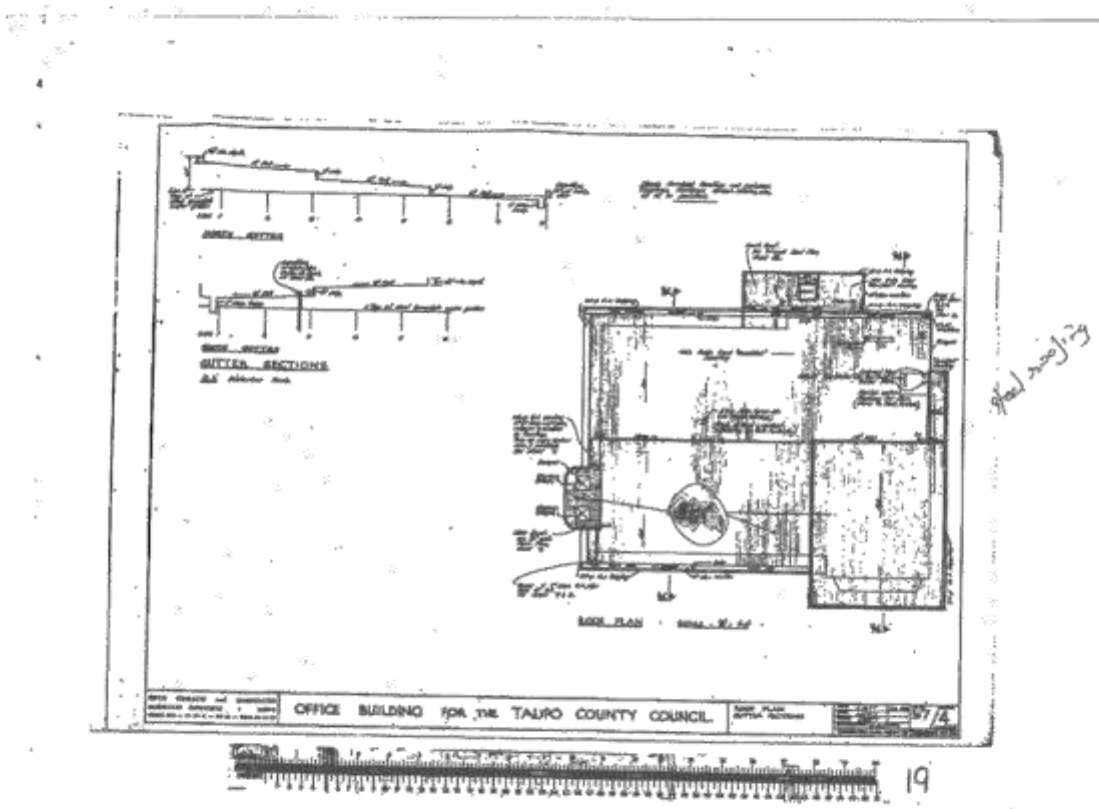
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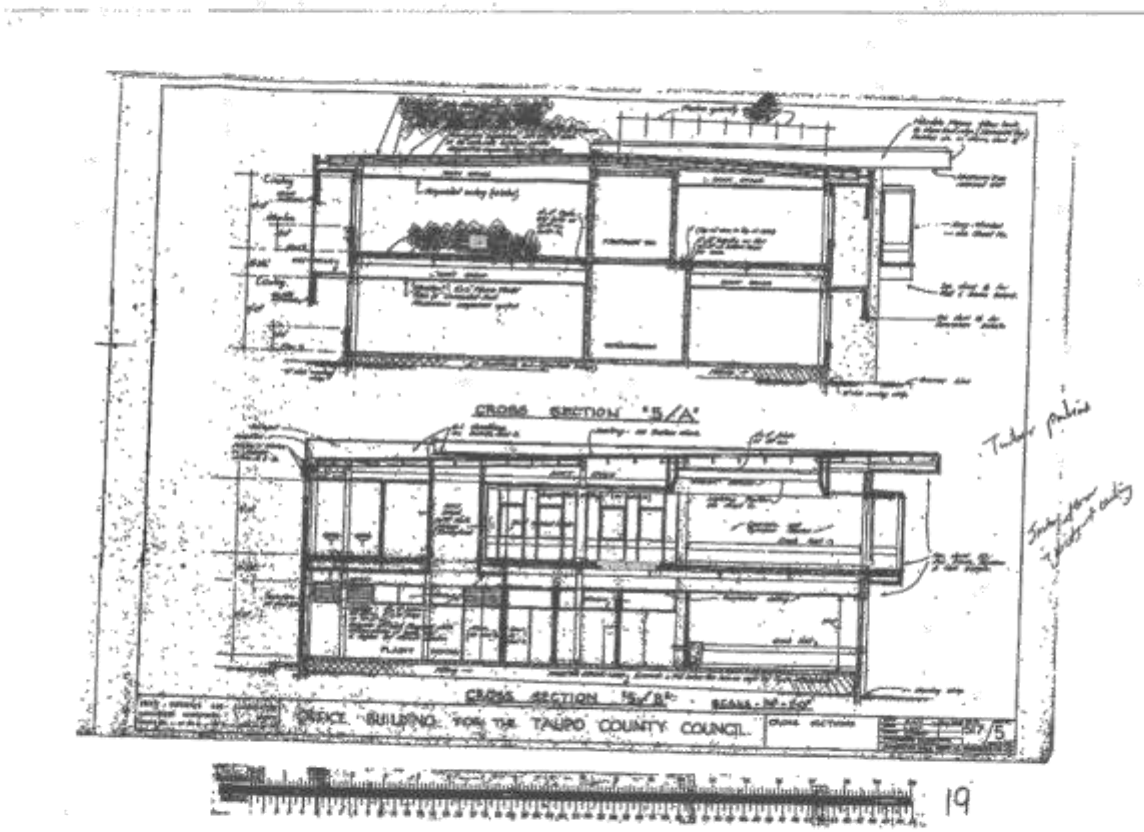
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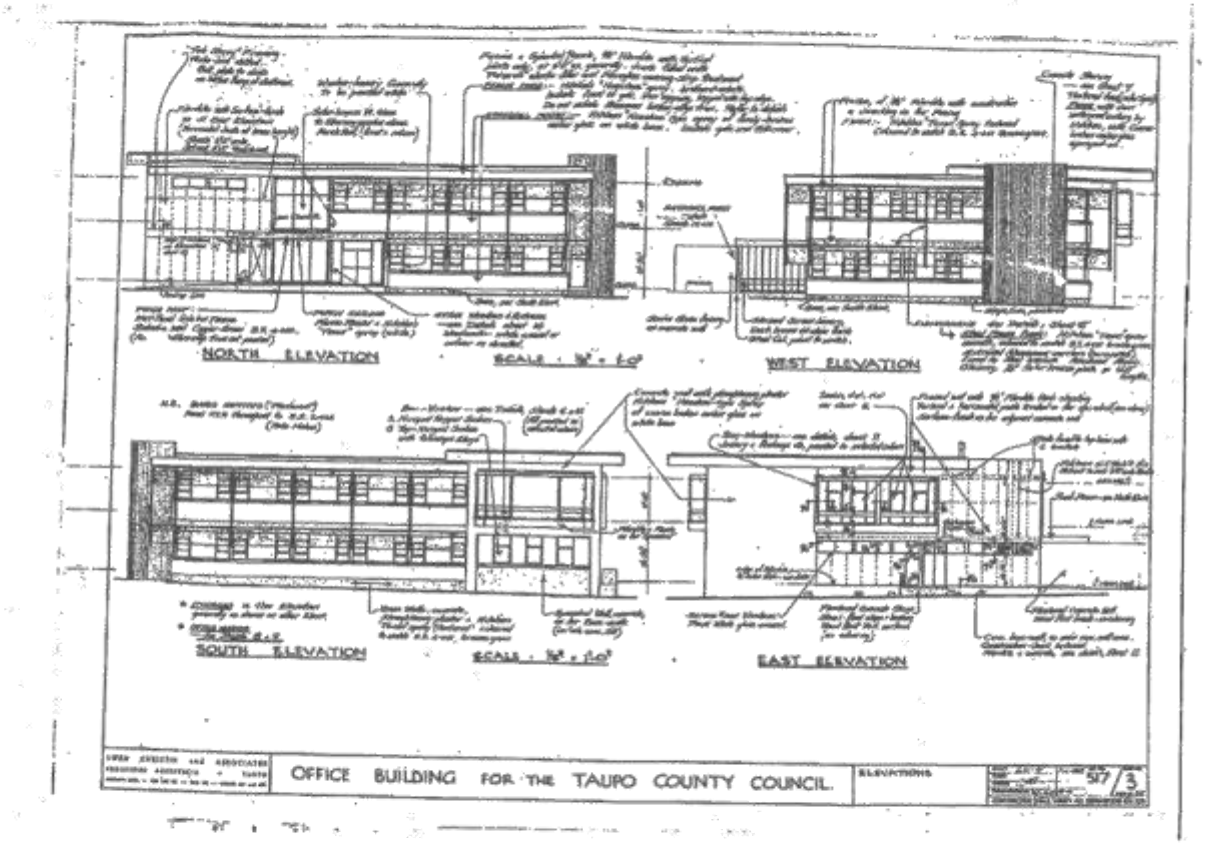
NORTH ELEVATION
SCALE : 1/8" = 1'-0"
WEST ELEVATION
SOUTH ELEVATION
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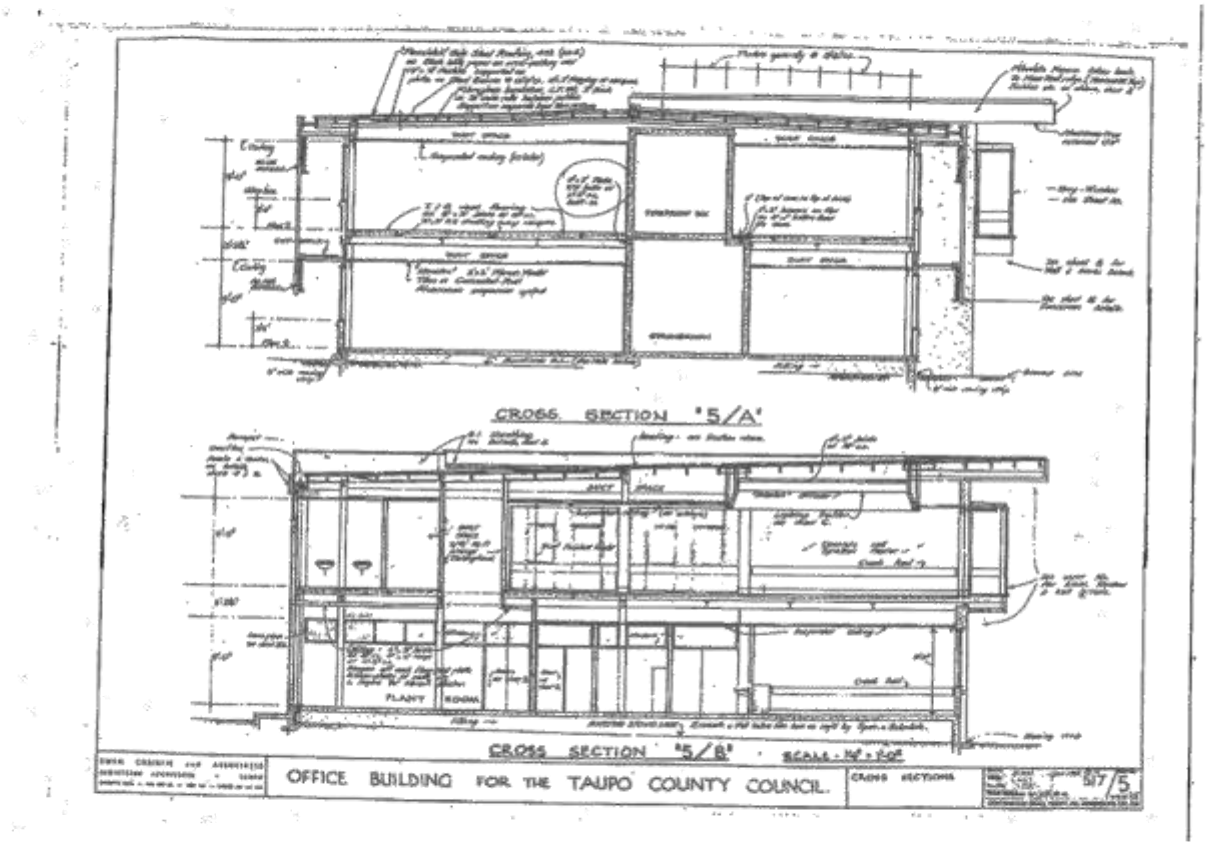
EAST ELEVATION
OFFICE BUILDING FOR THE TAUPO COUNTY COUNCIL.
ELEVATIONS
517/3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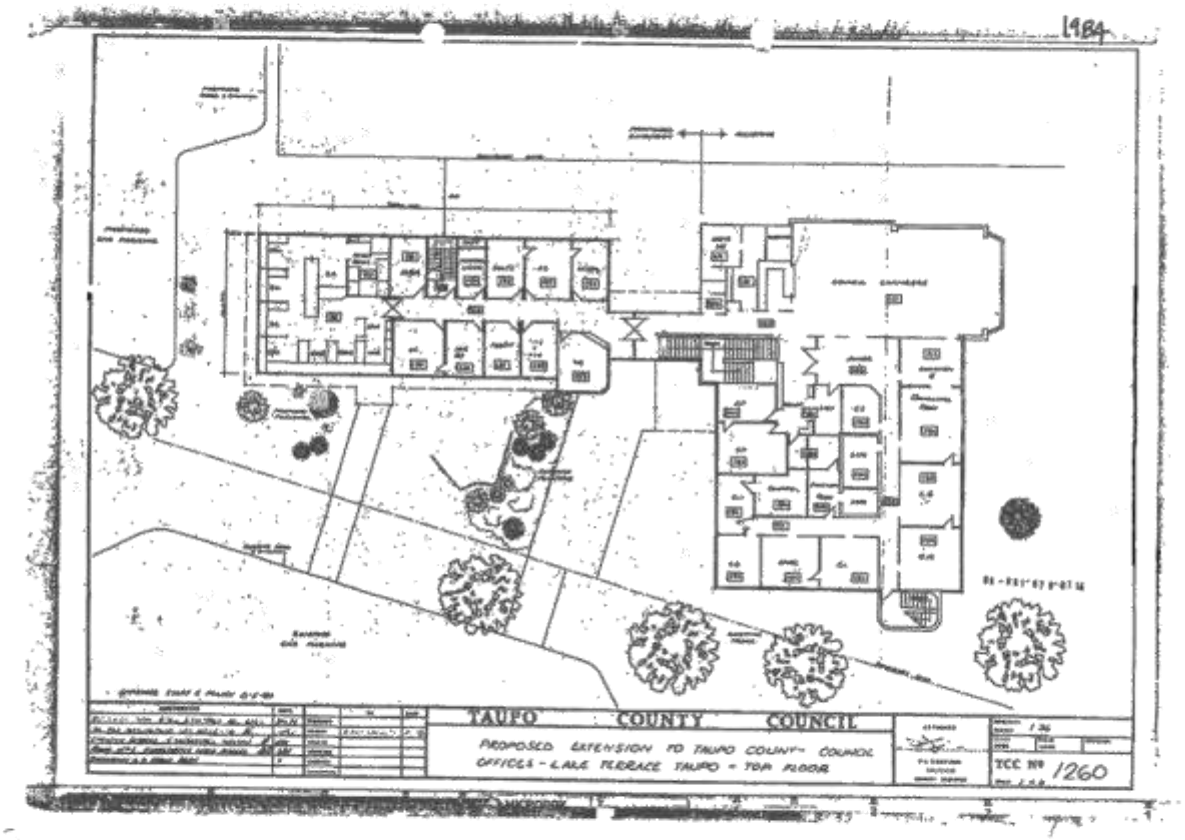
Attachment 3

Extensions in 1984 – Architectural & Structural Drawings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PROPOSED EXTENSION TO TAUPO COUNTY COUNCIL
OFFICES - LAKE TERRACE TAUPO - 1ST FLOOR
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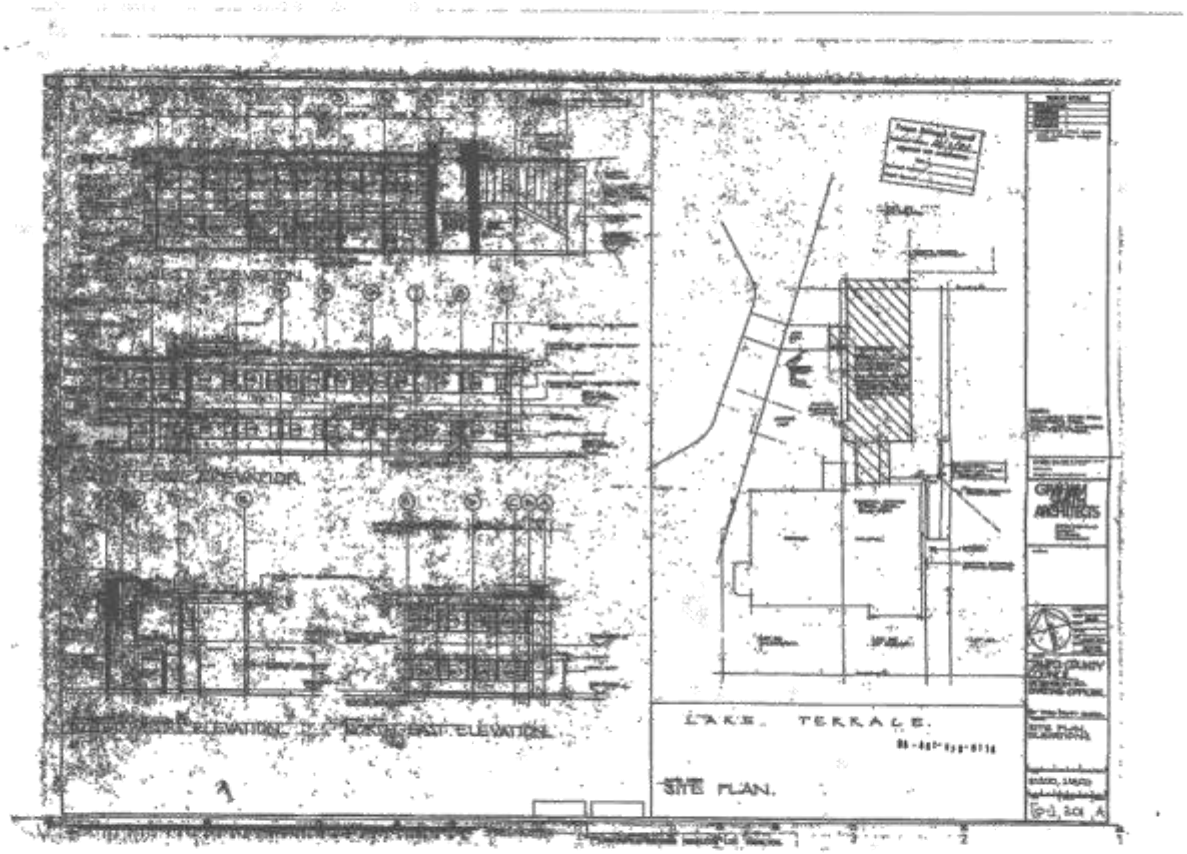
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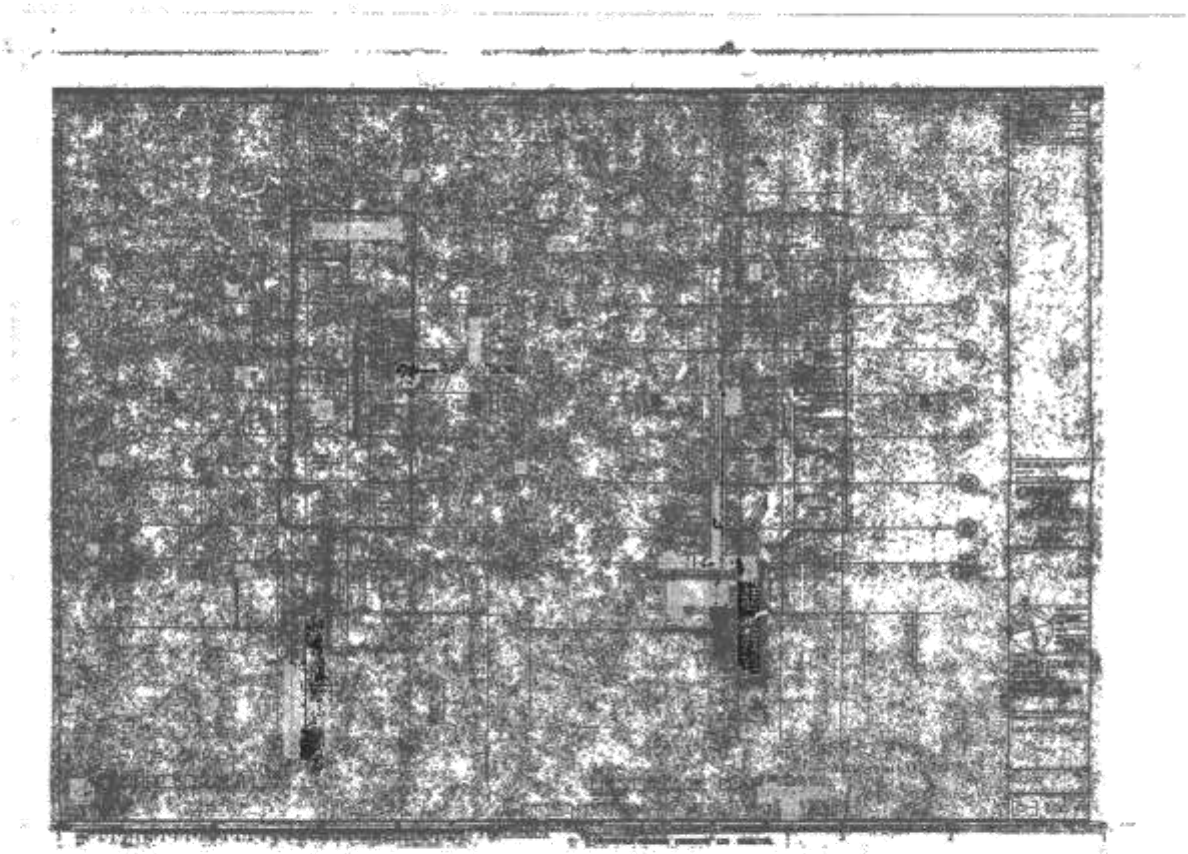
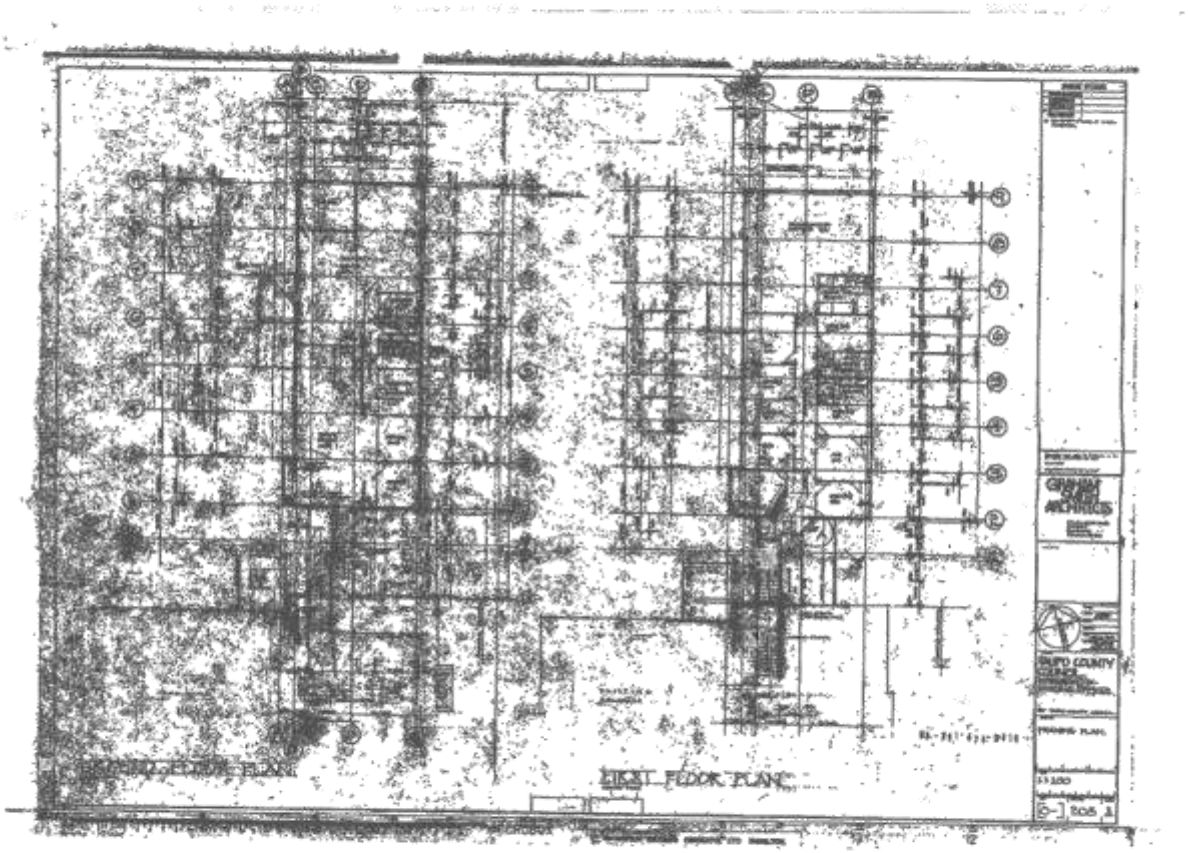
SITE PLAN.

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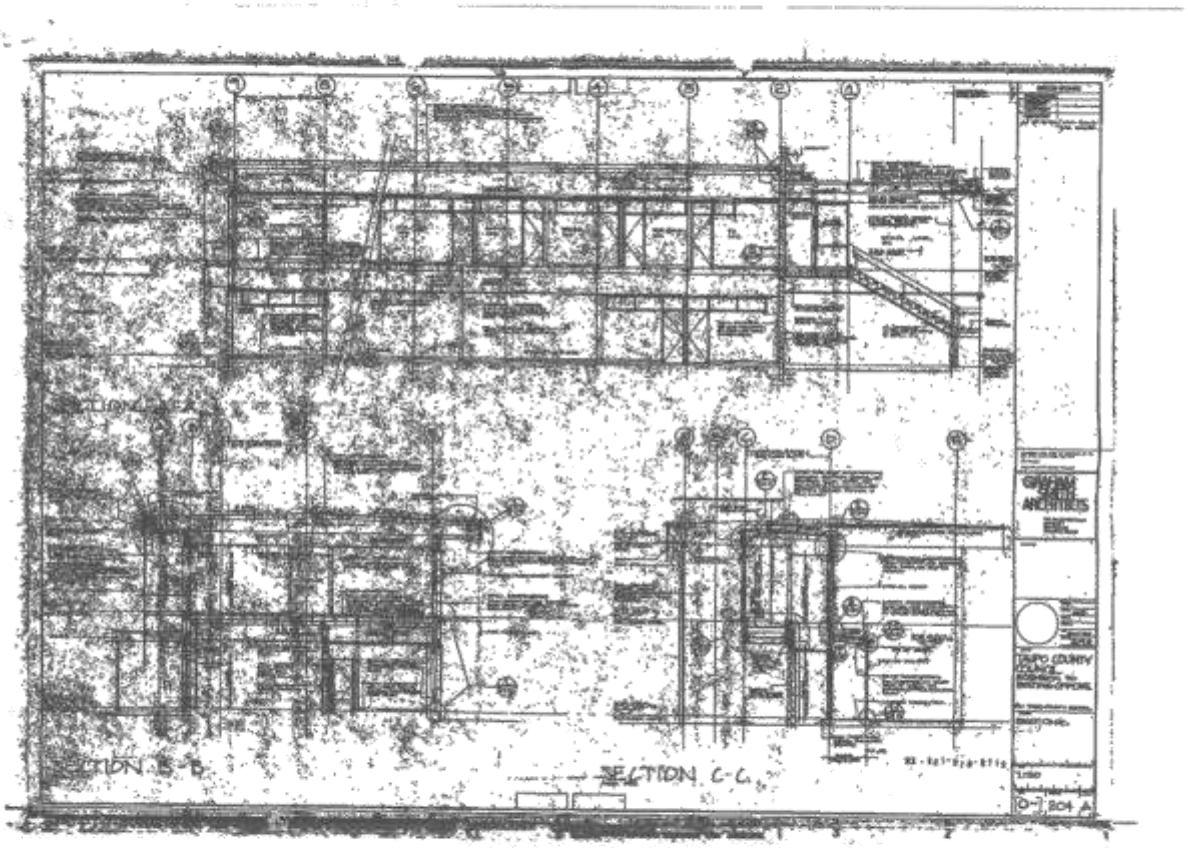
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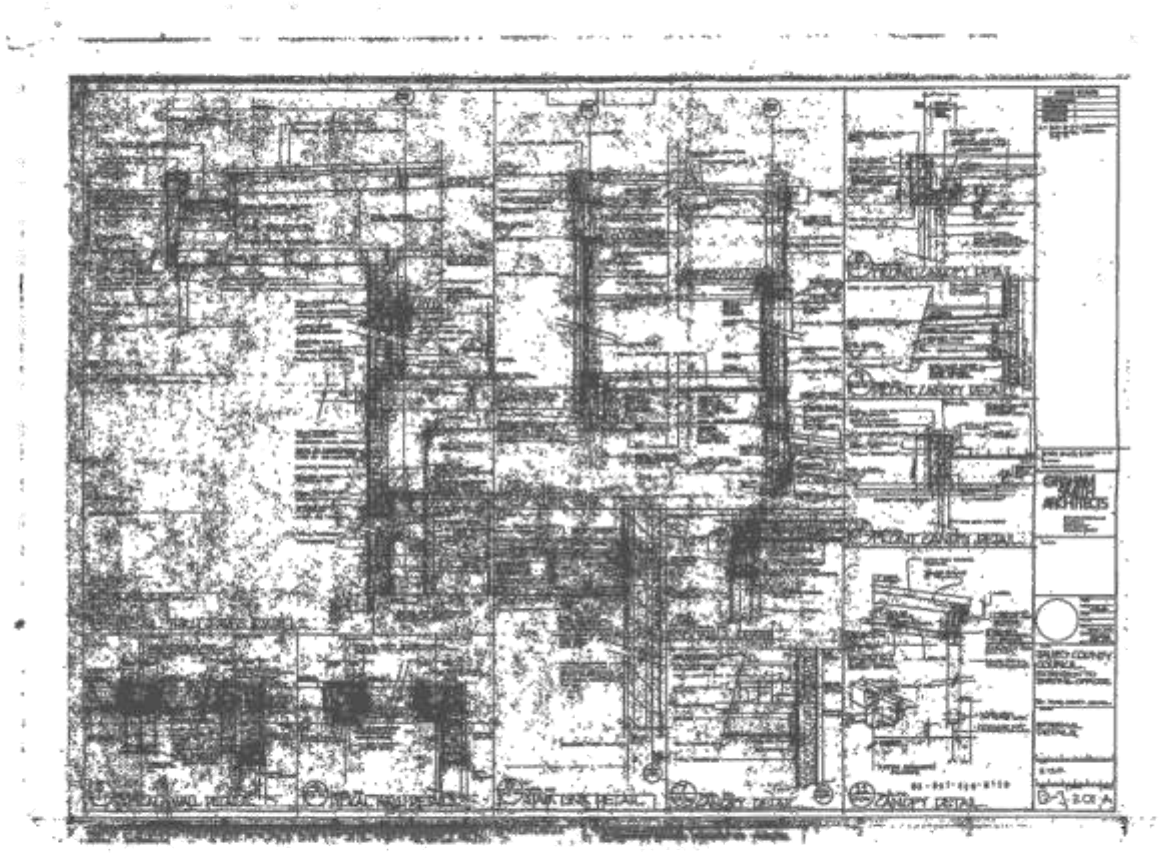

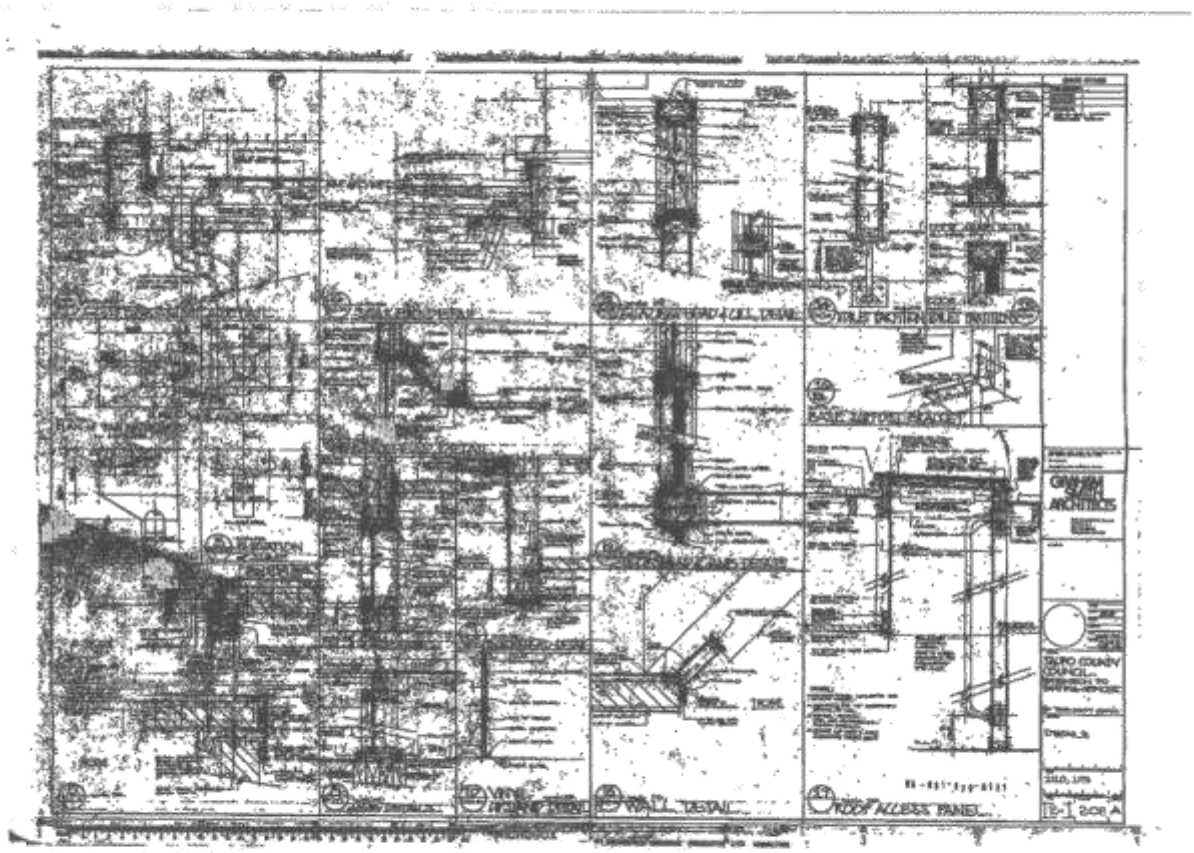

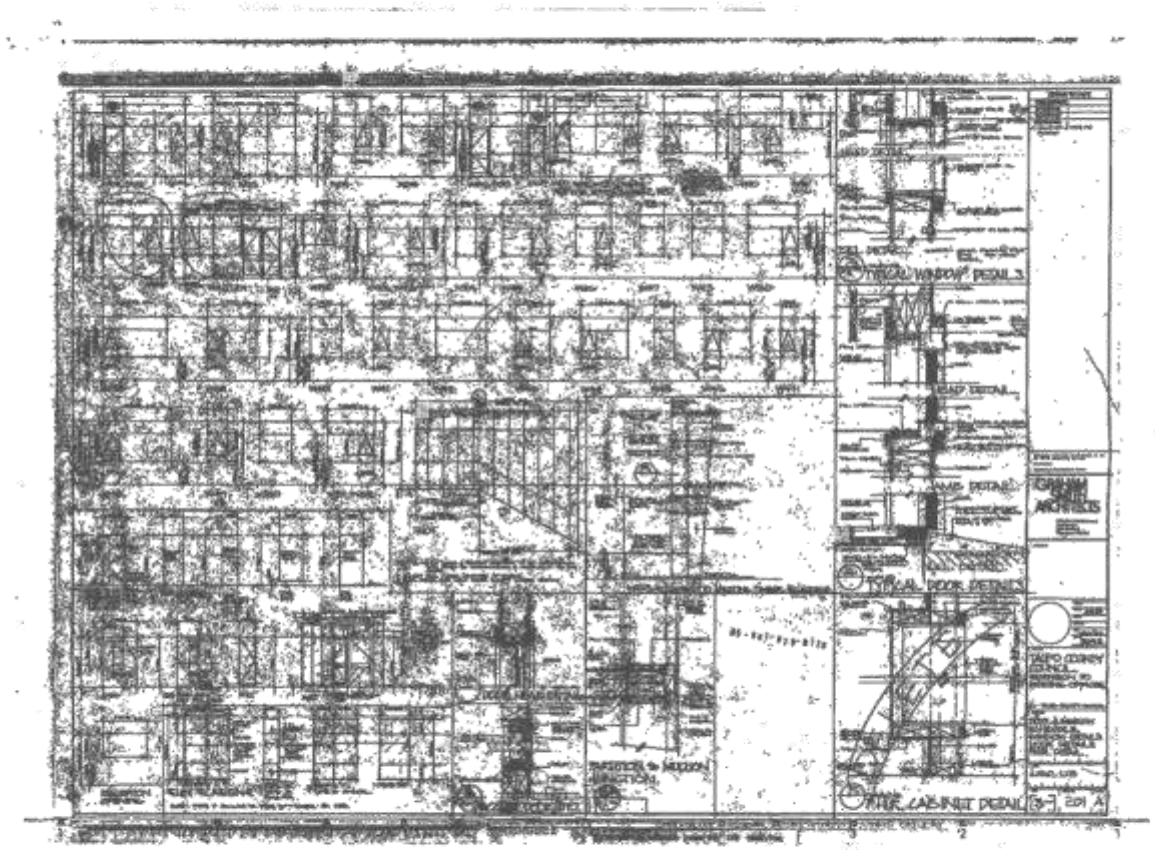

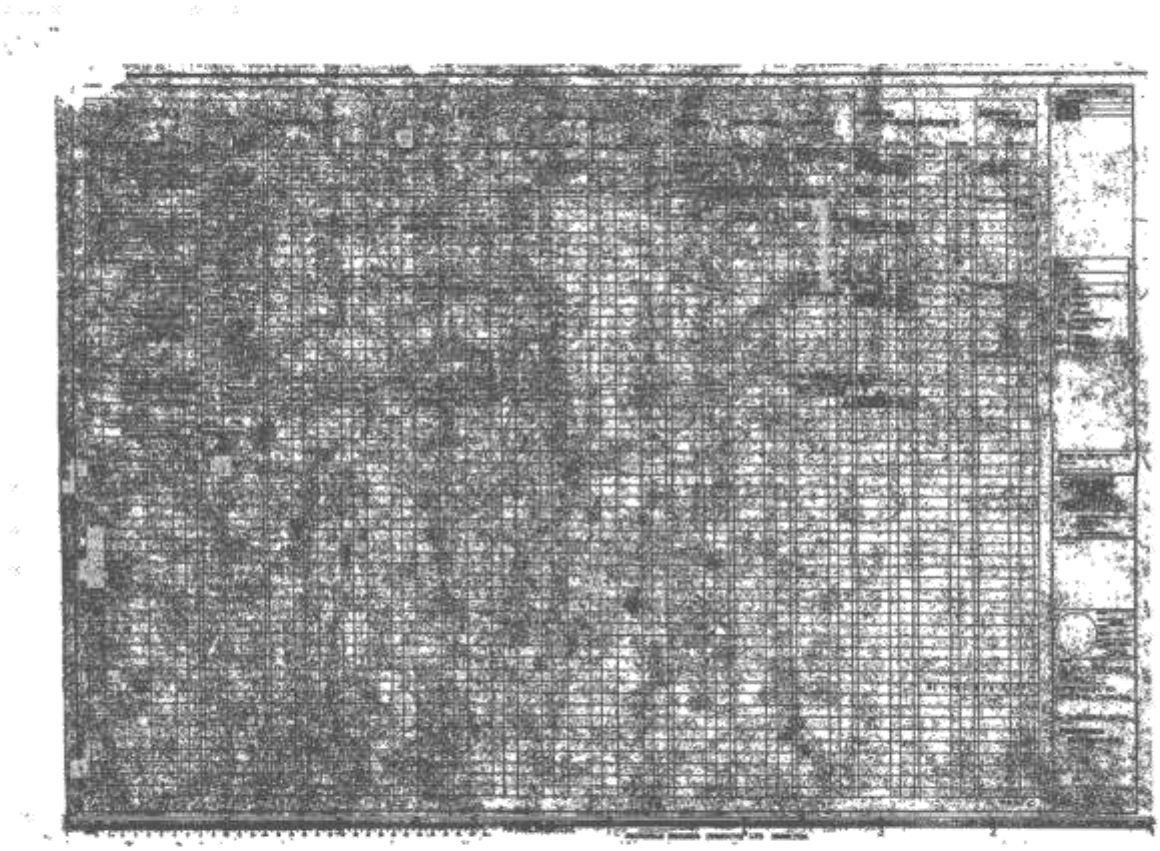

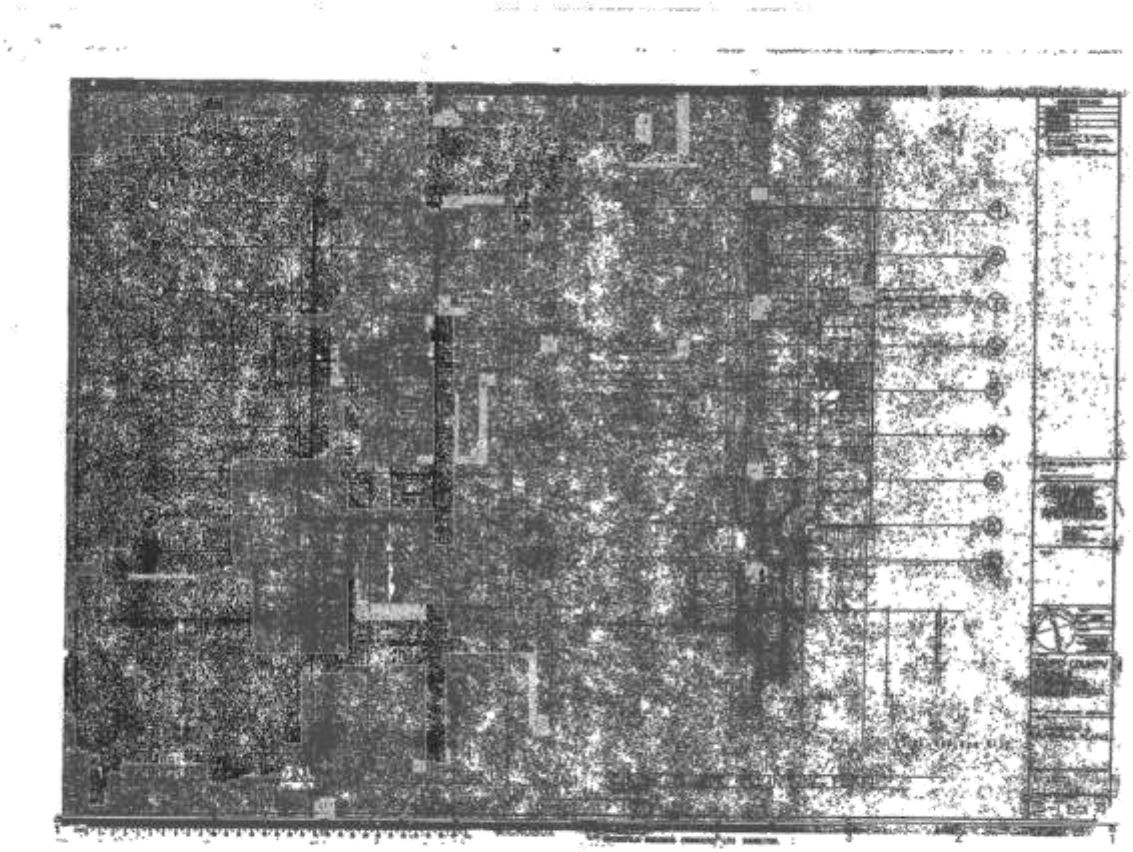

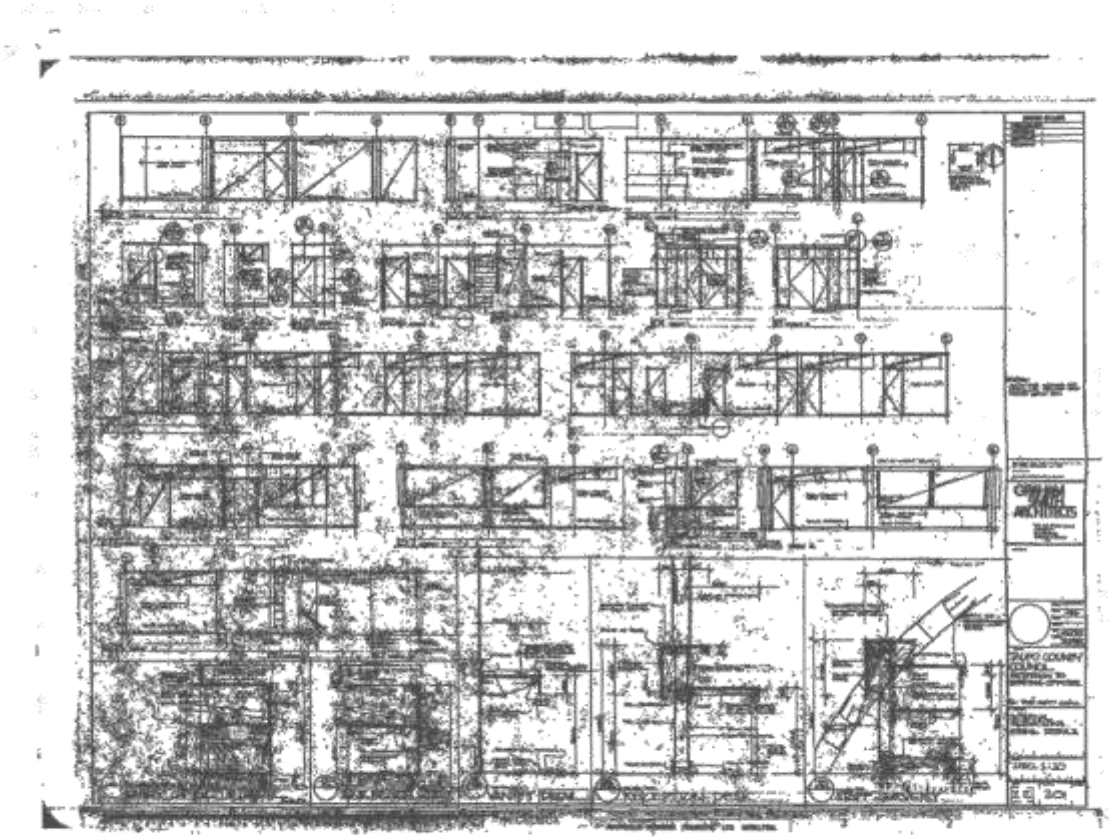

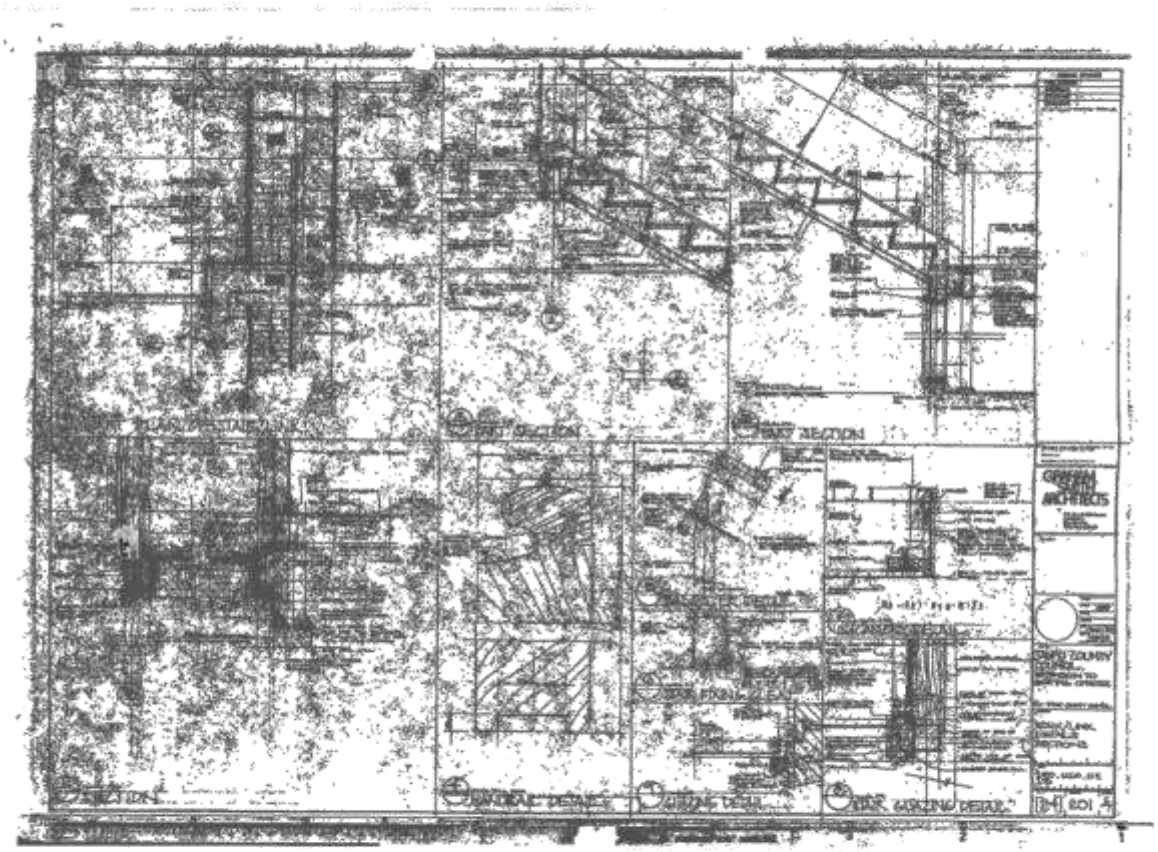

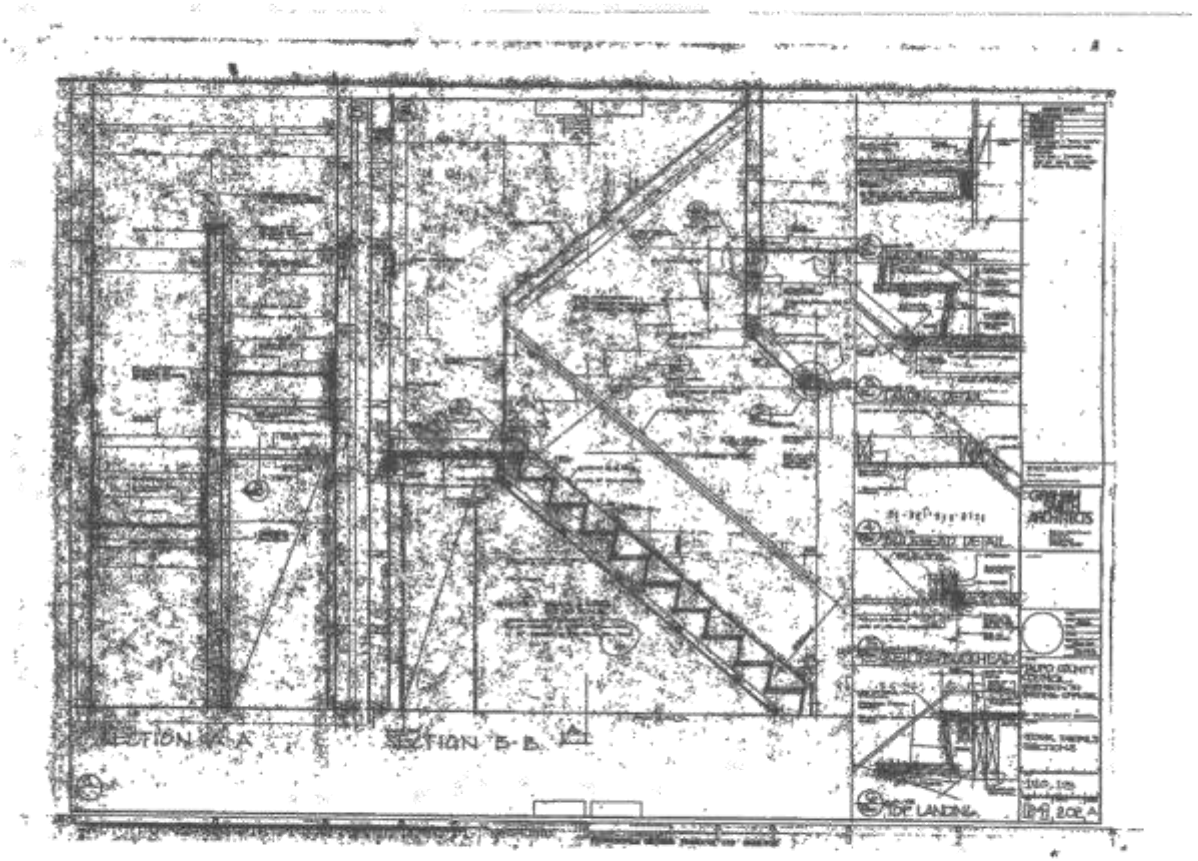
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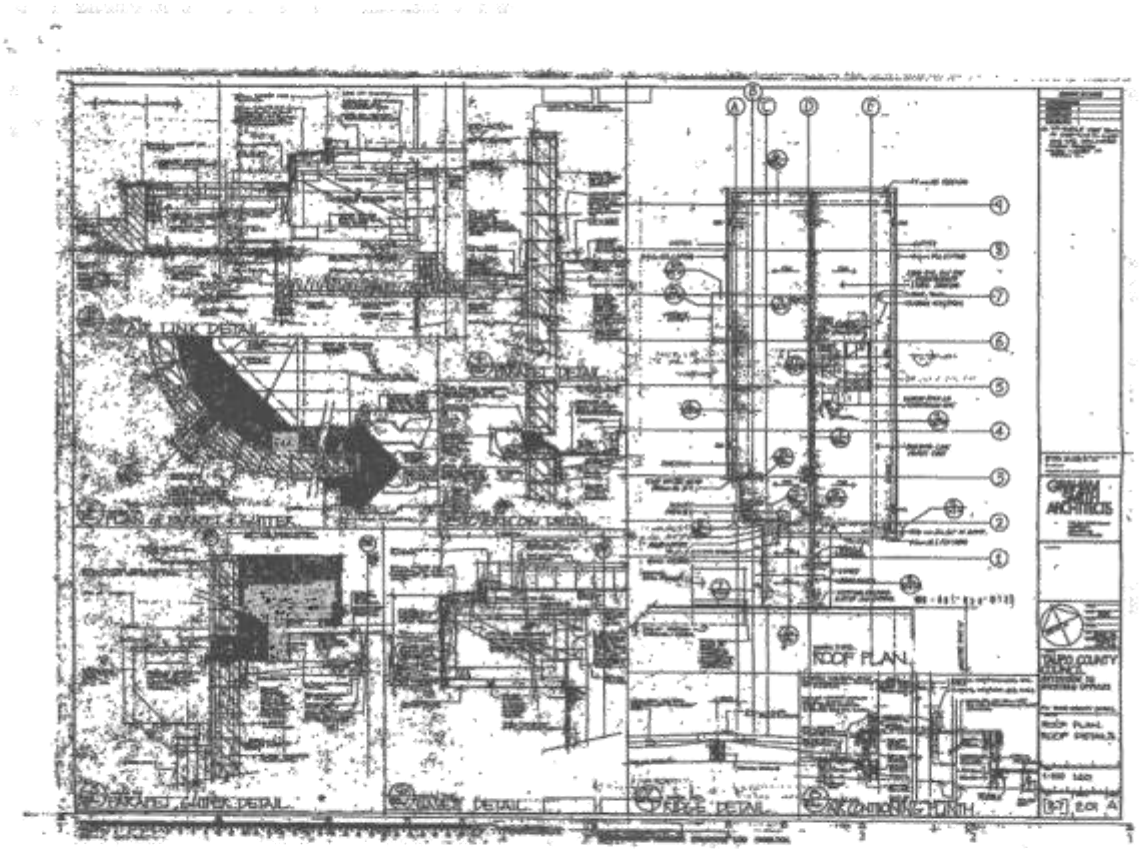
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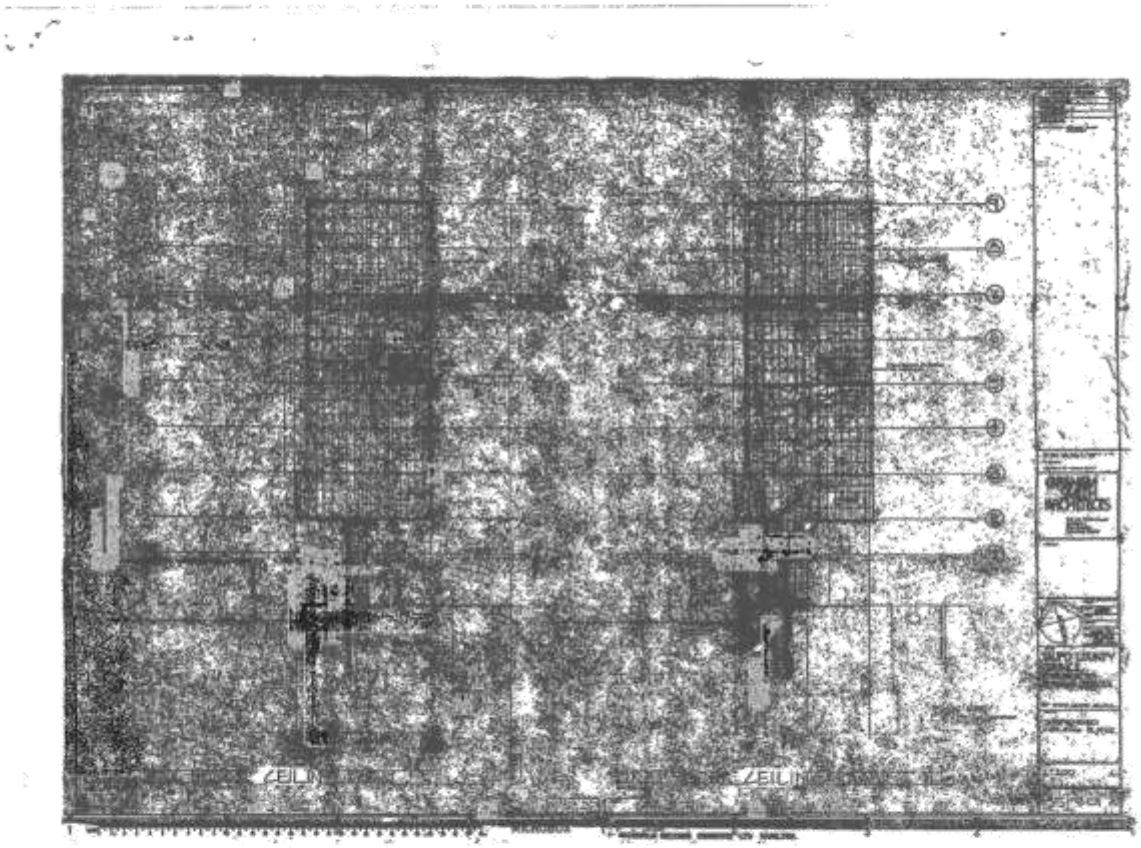
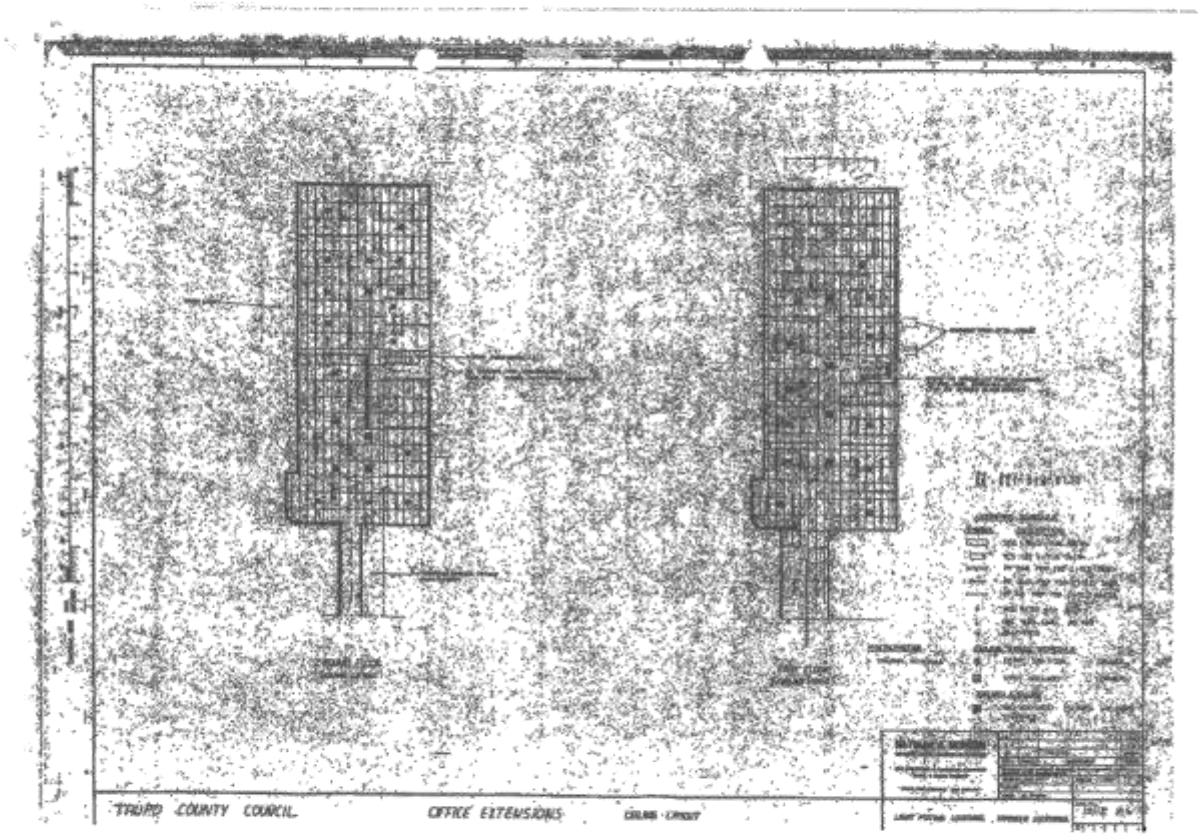
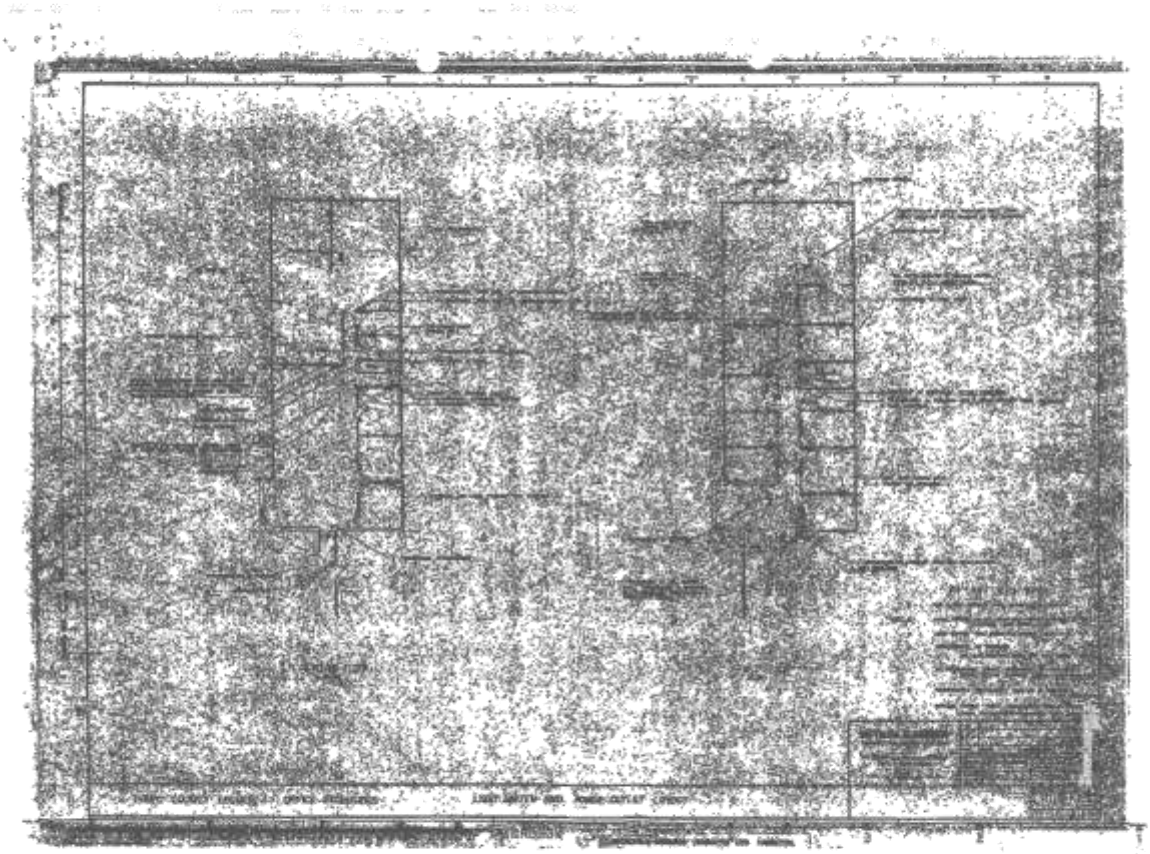
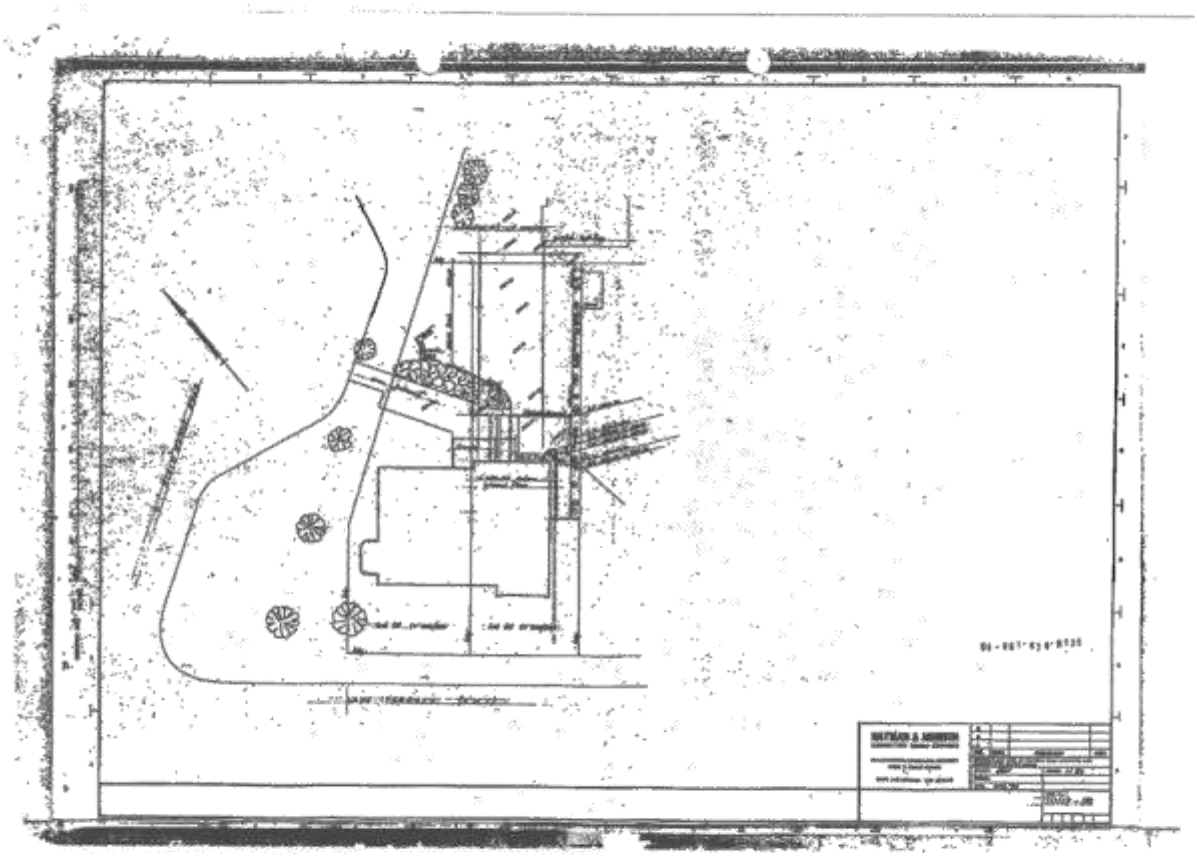
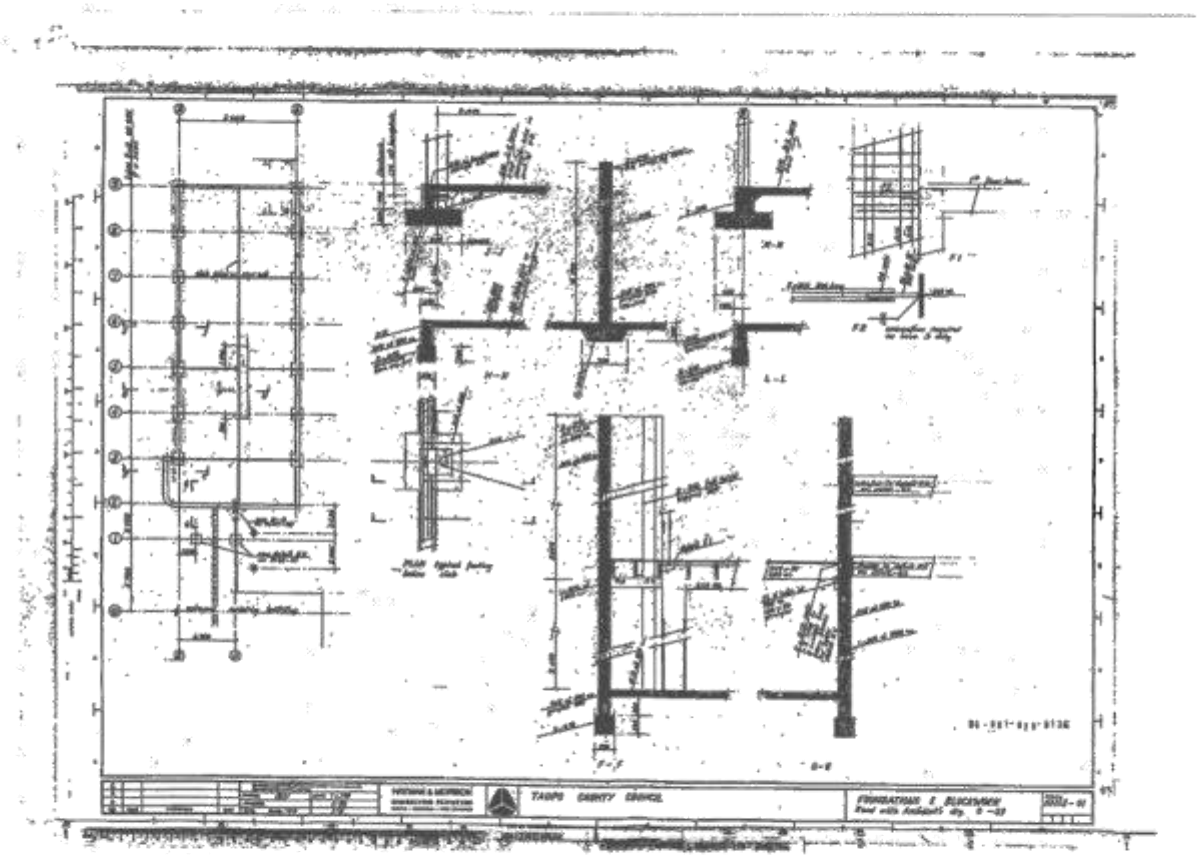
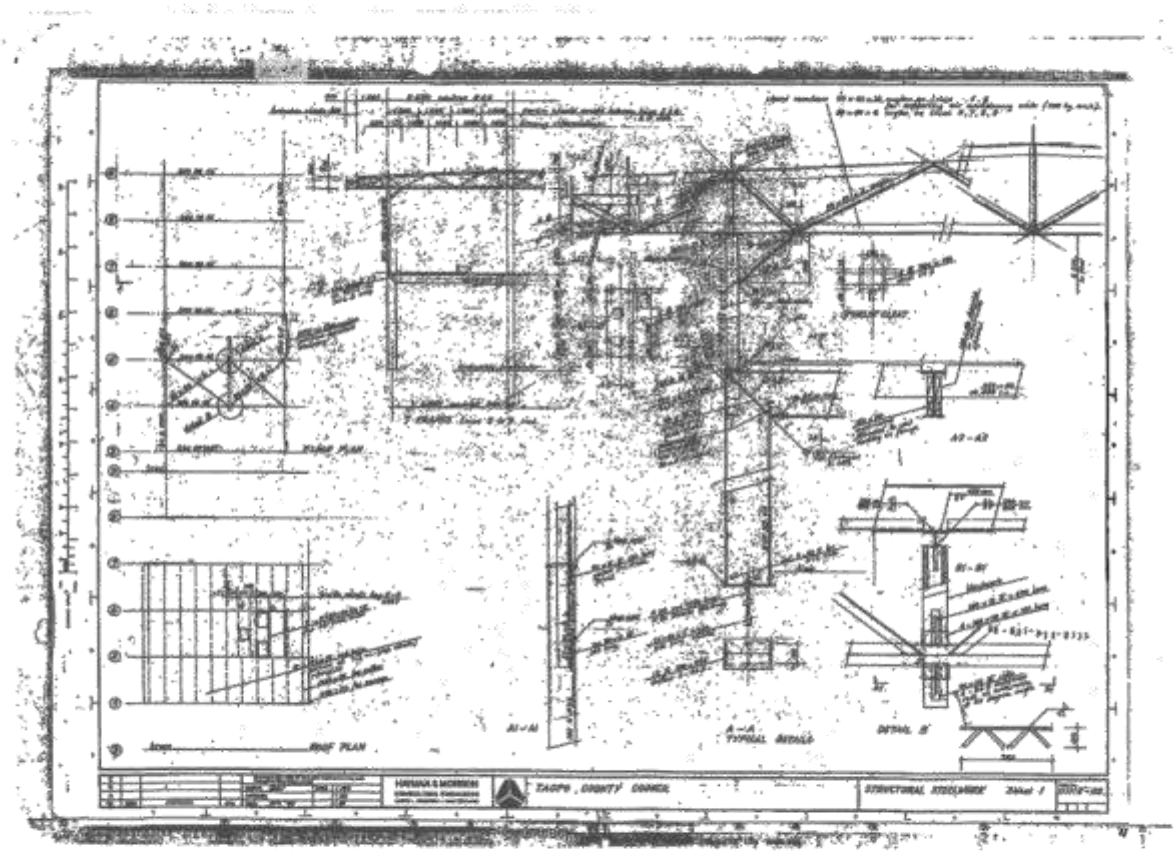


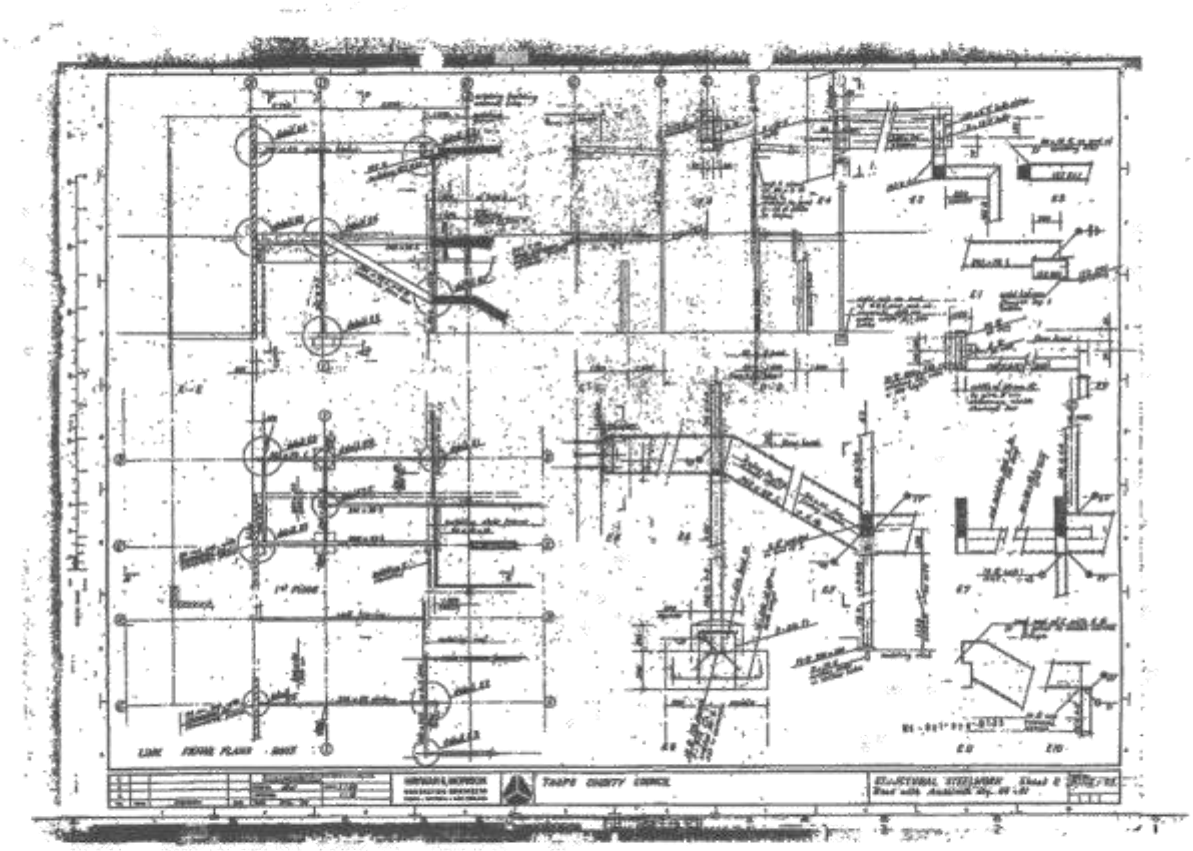

TAUPO COUNTY COUNCIL
OFFICE EXTENSIONS

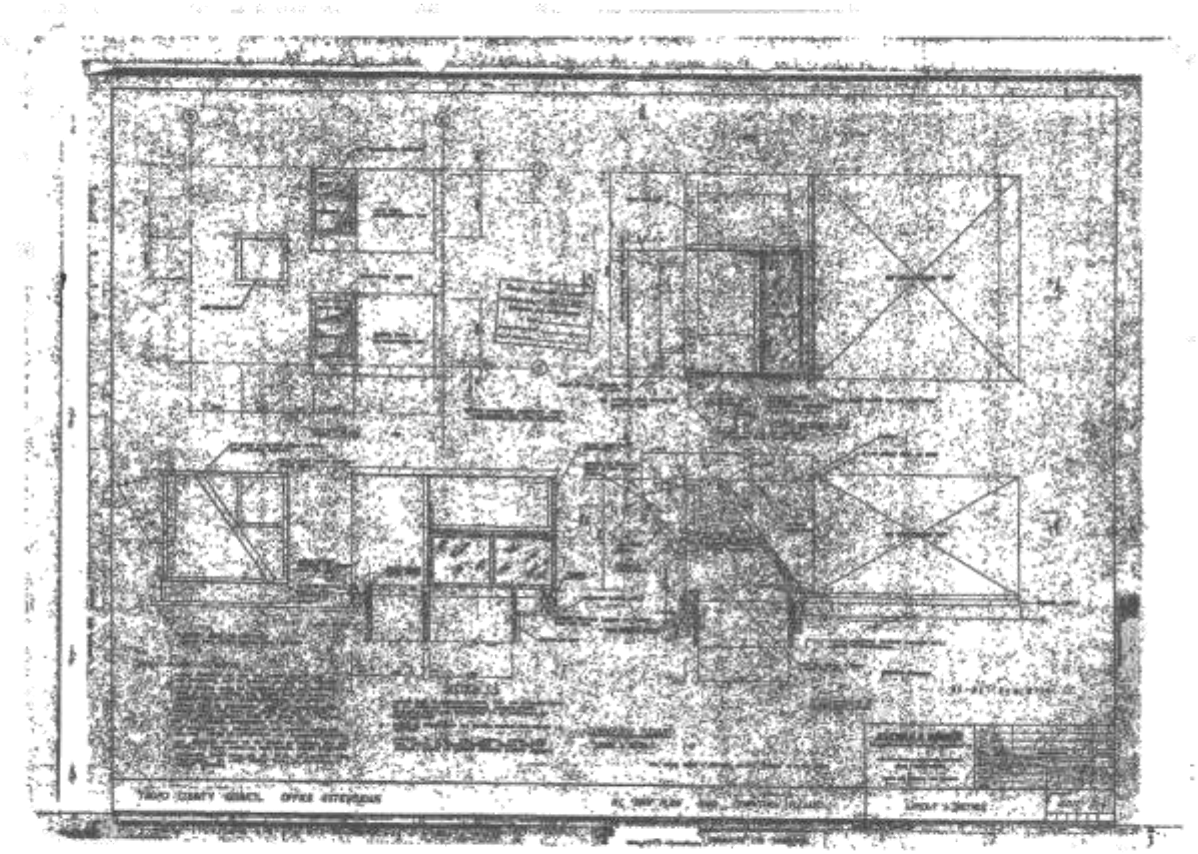


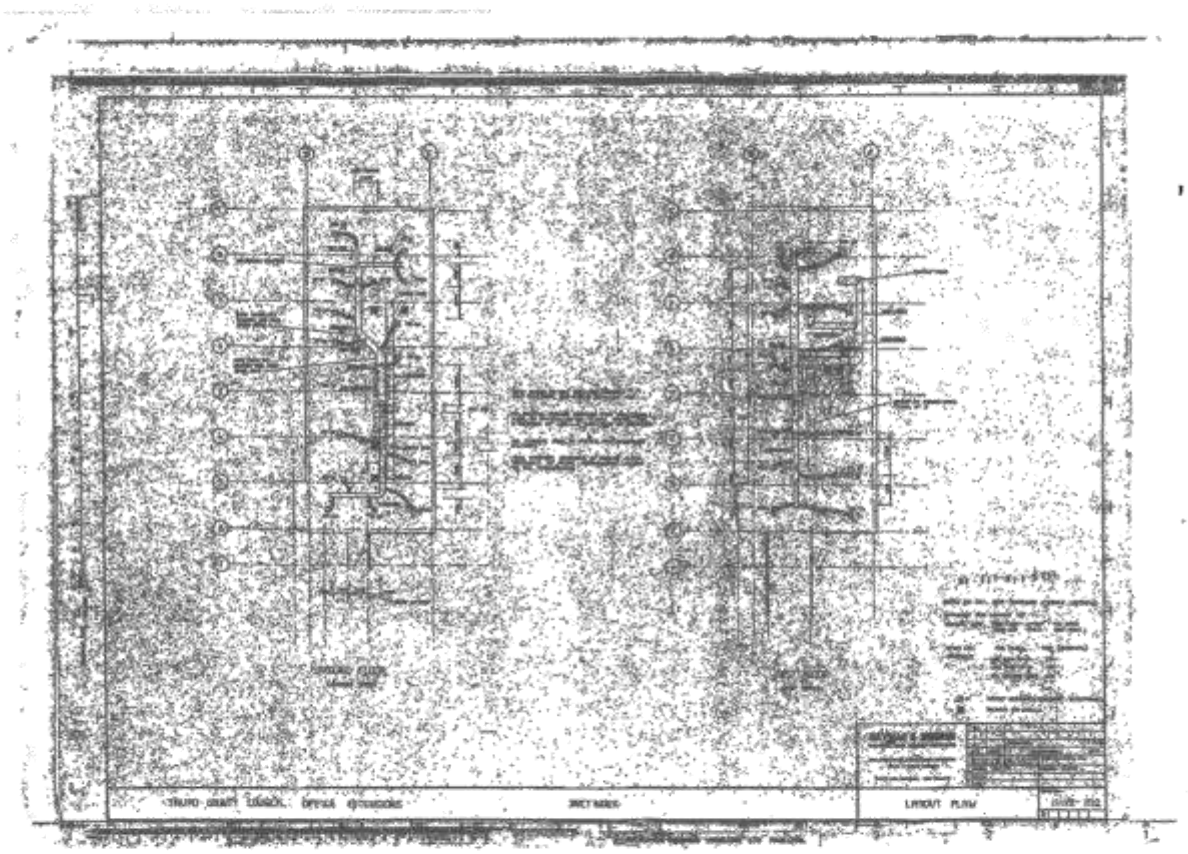


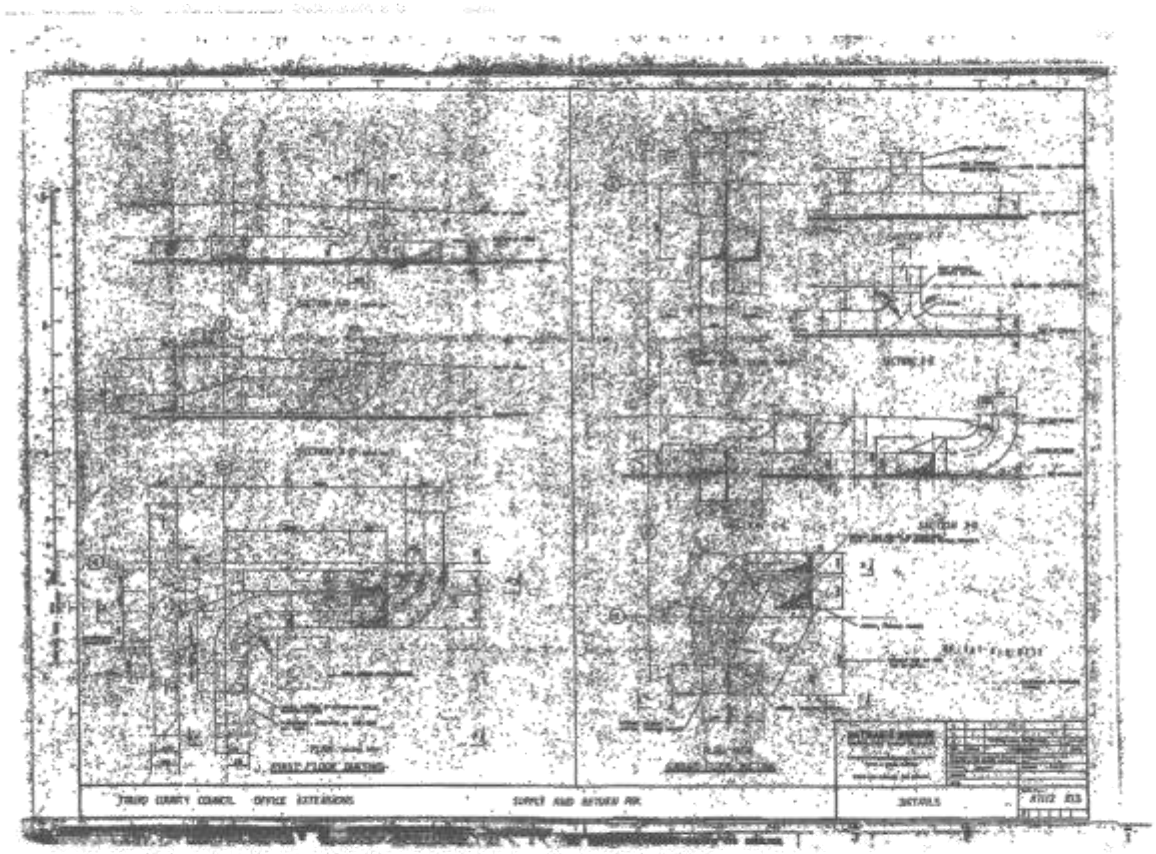






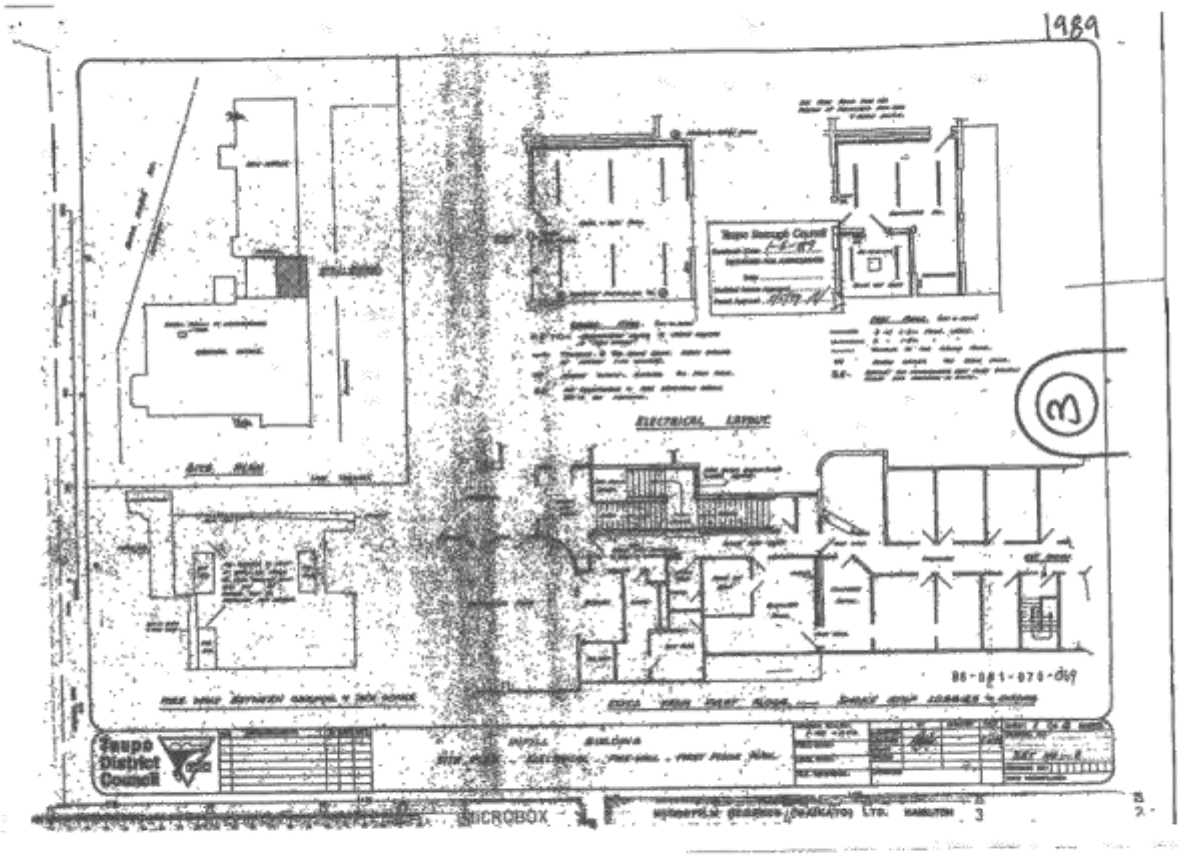


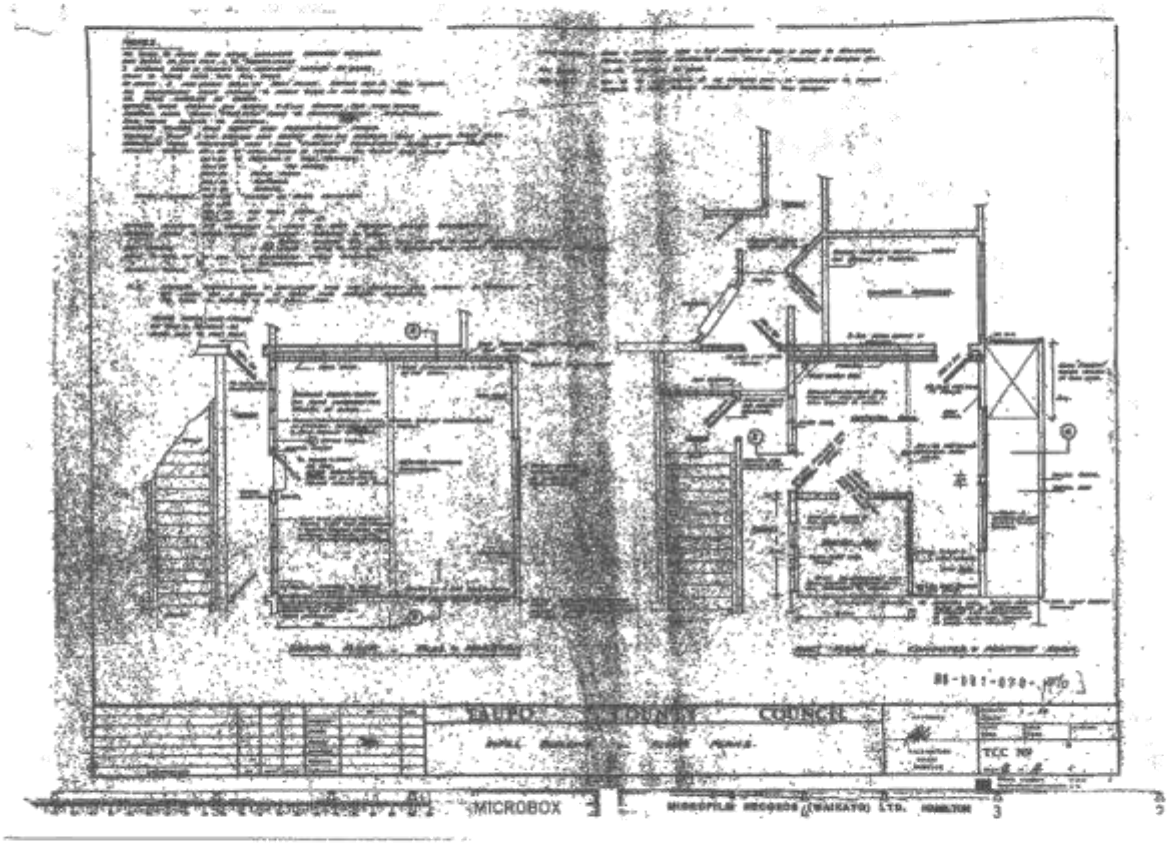


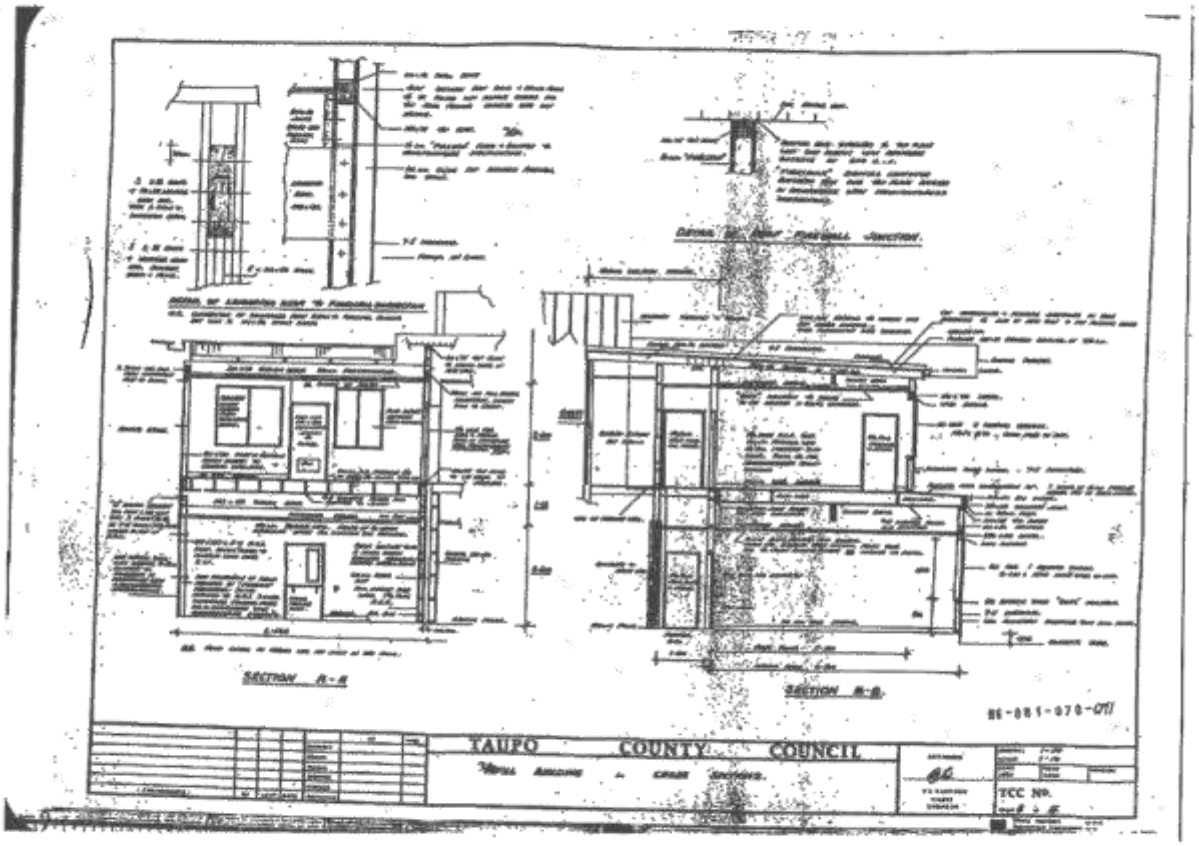


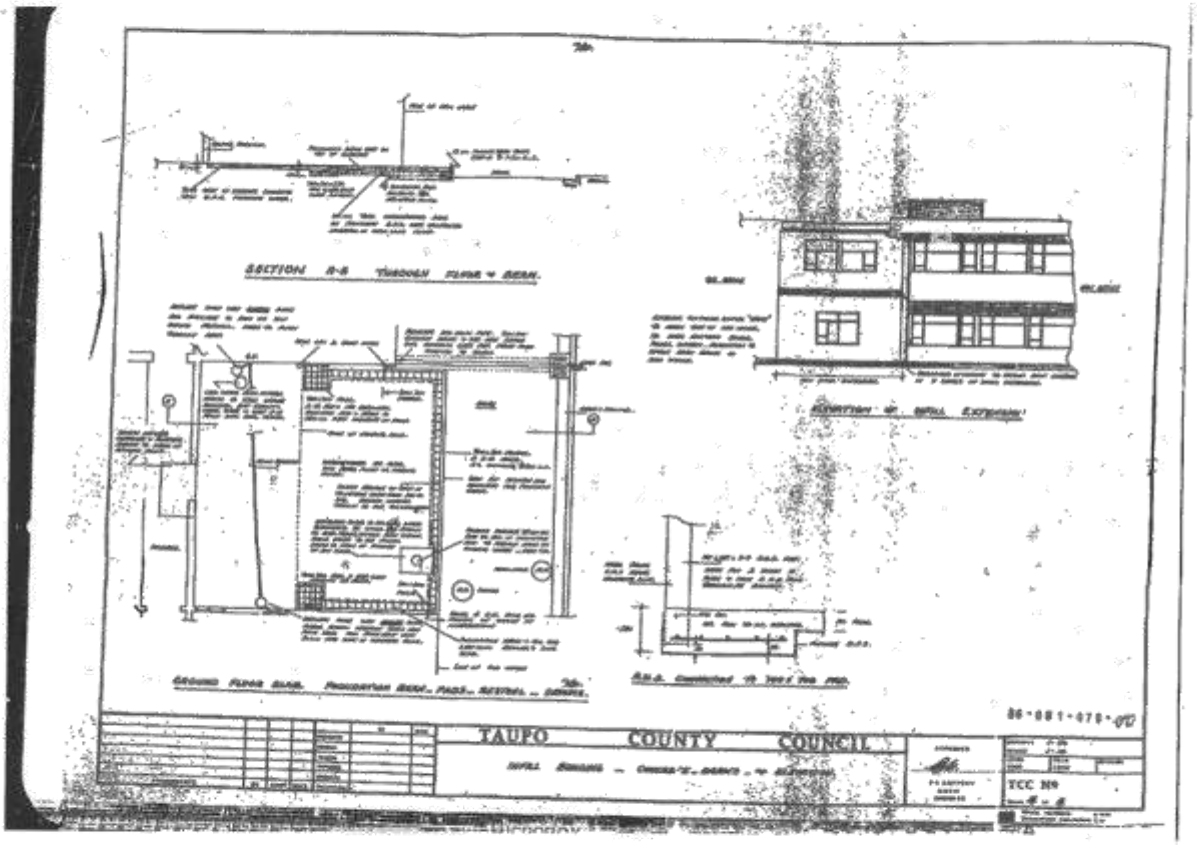
Attachment 4

Alterations in 1989


1989
ELECTRICAL LAYOUT
Taupo District Council
MICROBOX

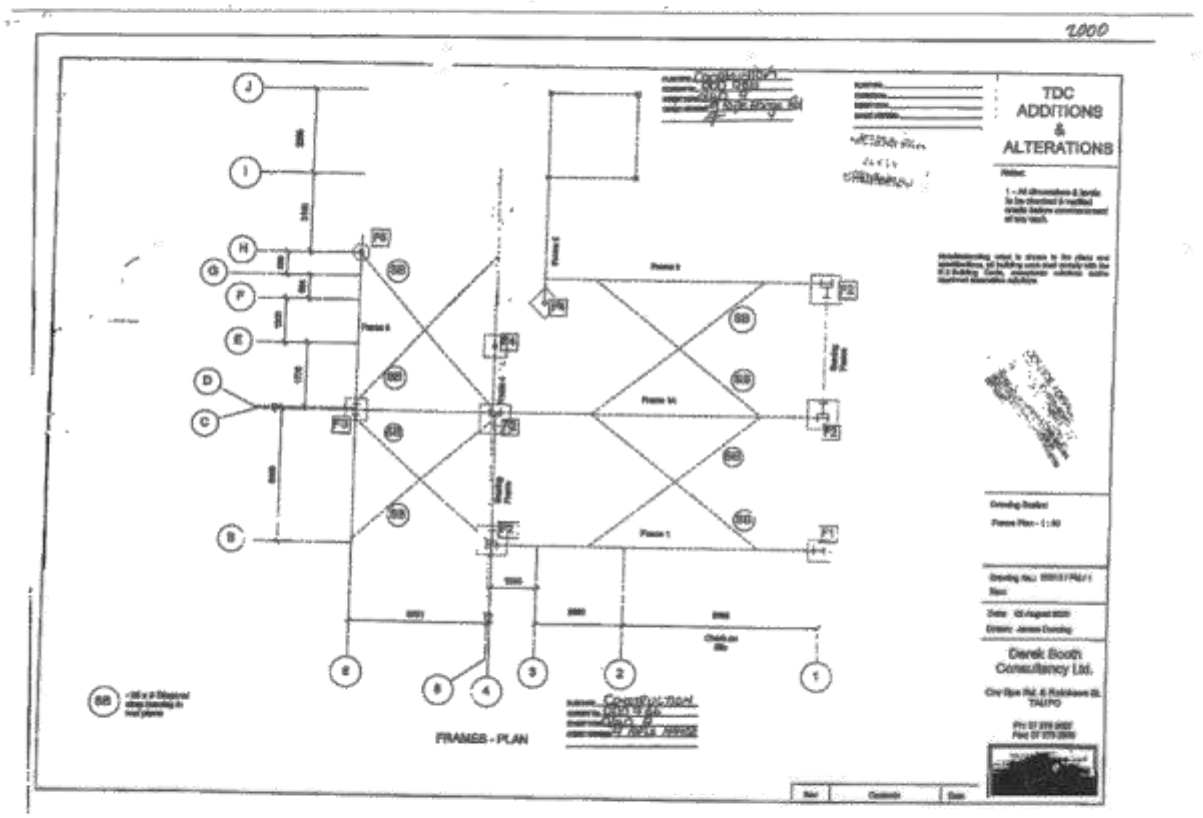

COUNCIL
MICROBOX

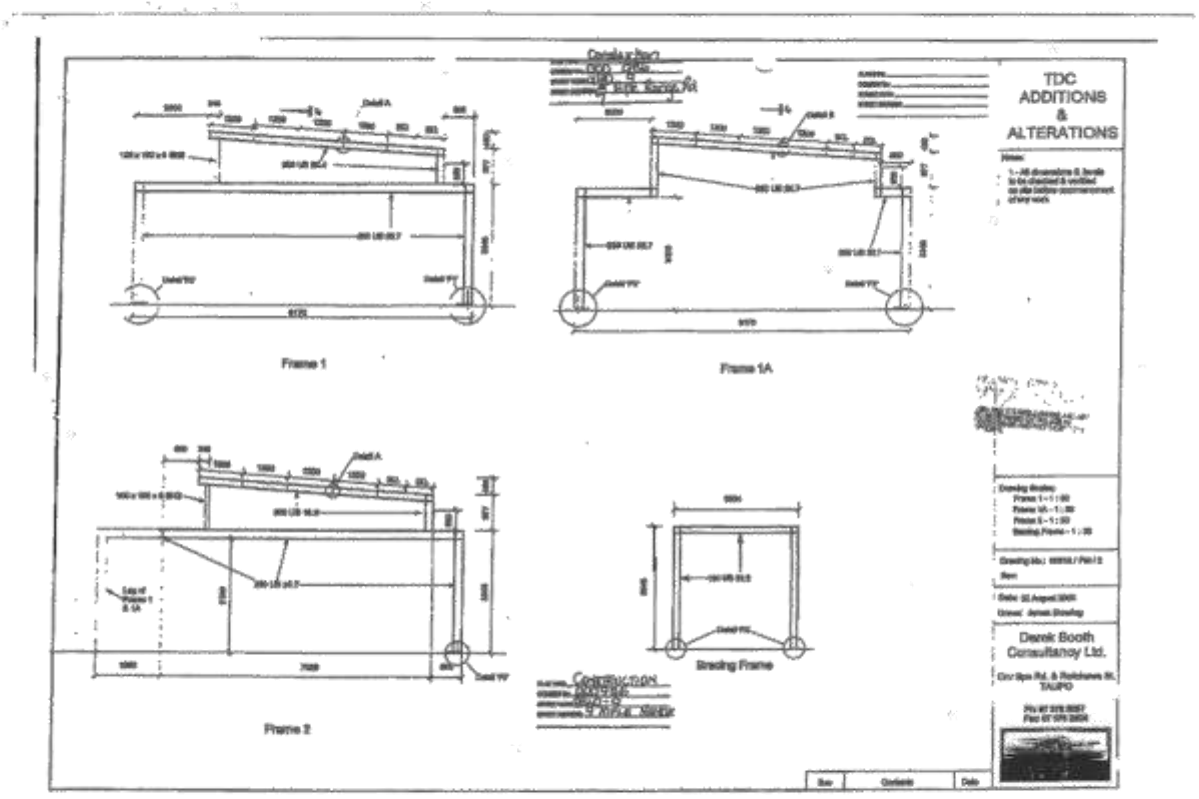

SECTION A-A
SECTION B-B
TAUPO COUNTY COUNCIL

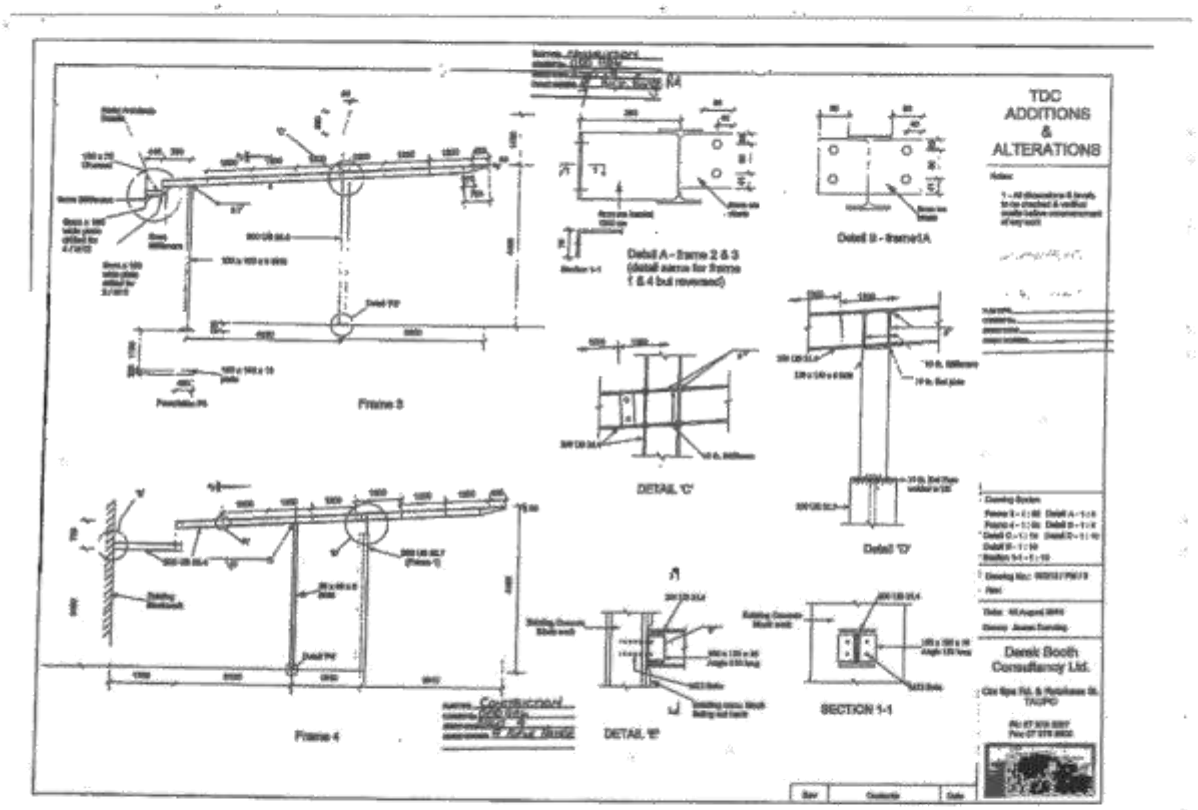

TAUPO COUNTY COUNCIL
TCC N9

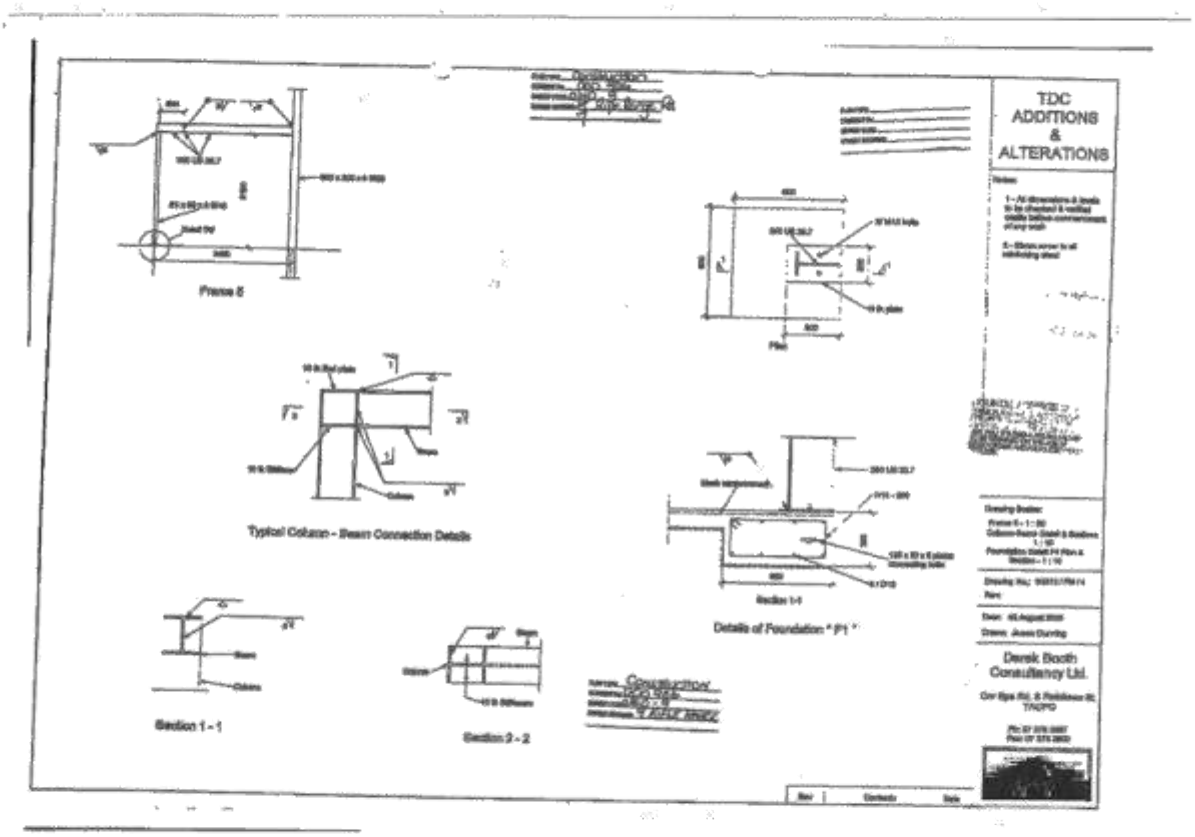
Attachment 5

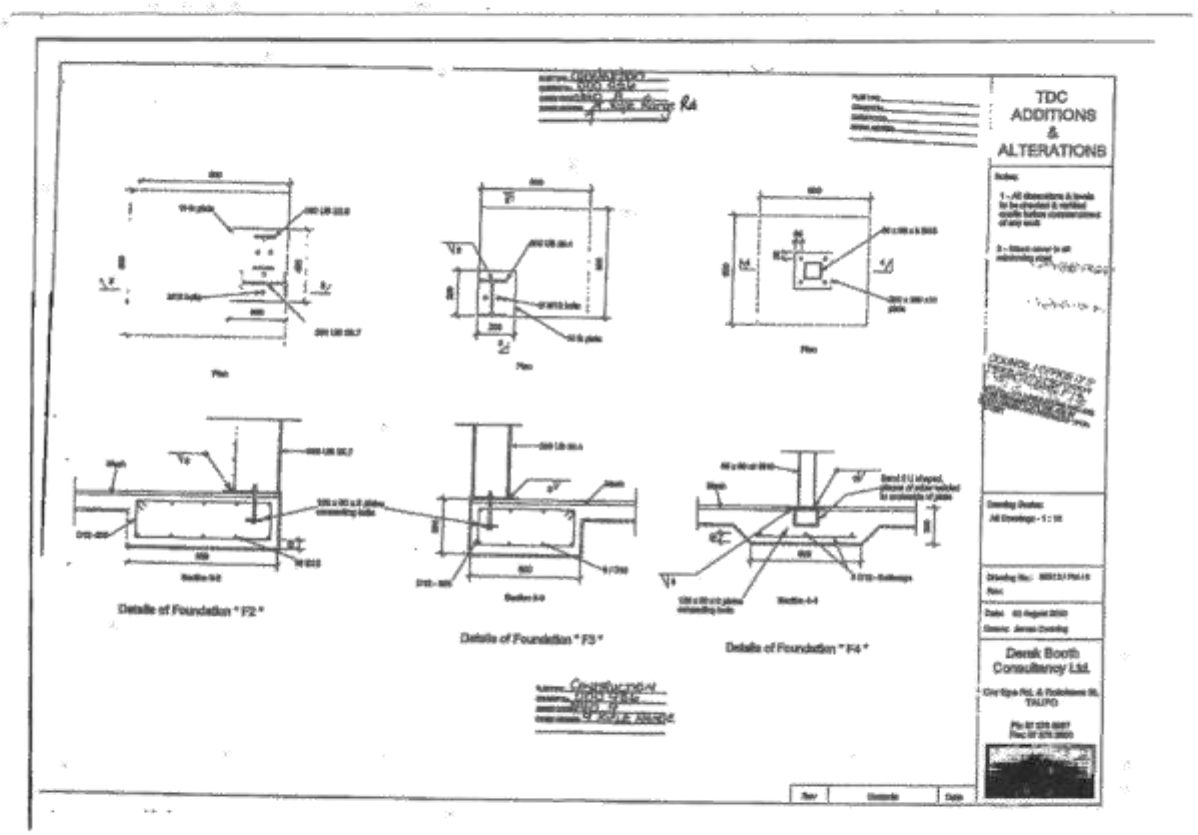
Single Storey Addition & Two Storey Extension in 2000 – Architectural & Structural Drawings

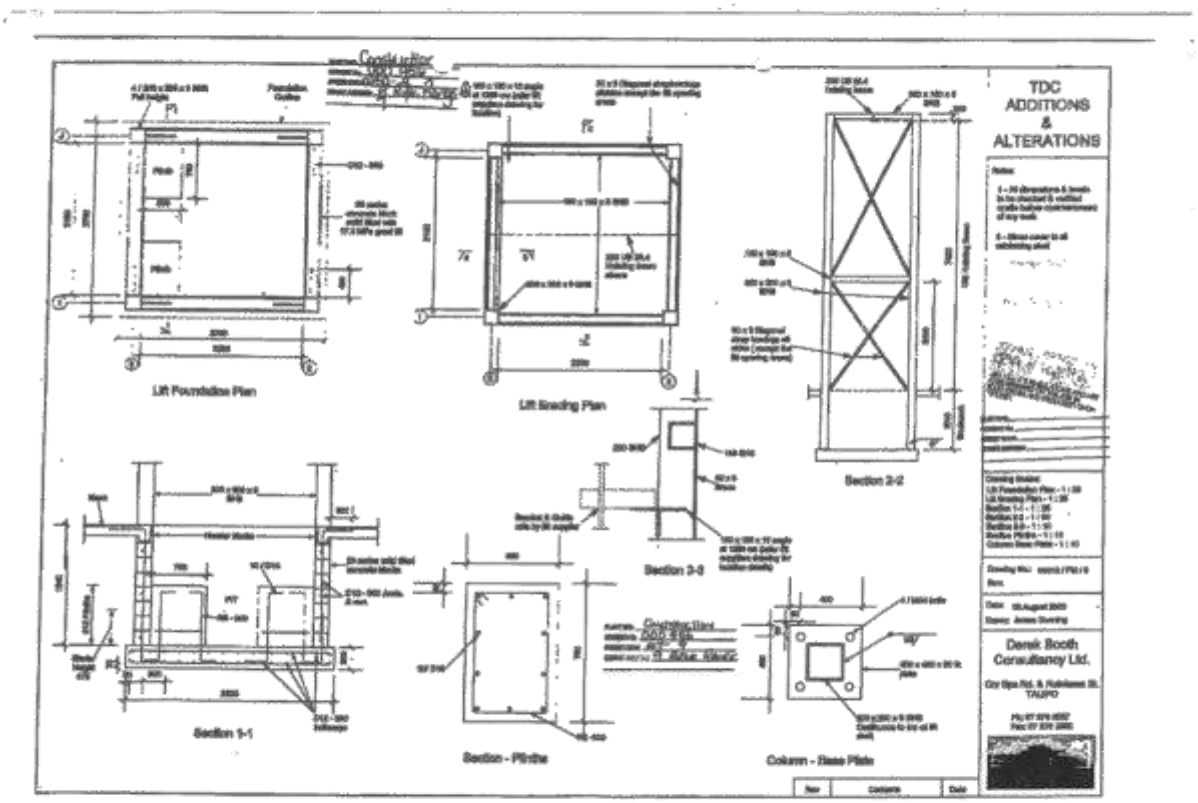

2000
TDC
ADDITIONS
&
ALTERATIONS
FRAMES - PLAN
Derek Booth
Consultancy Ltd.

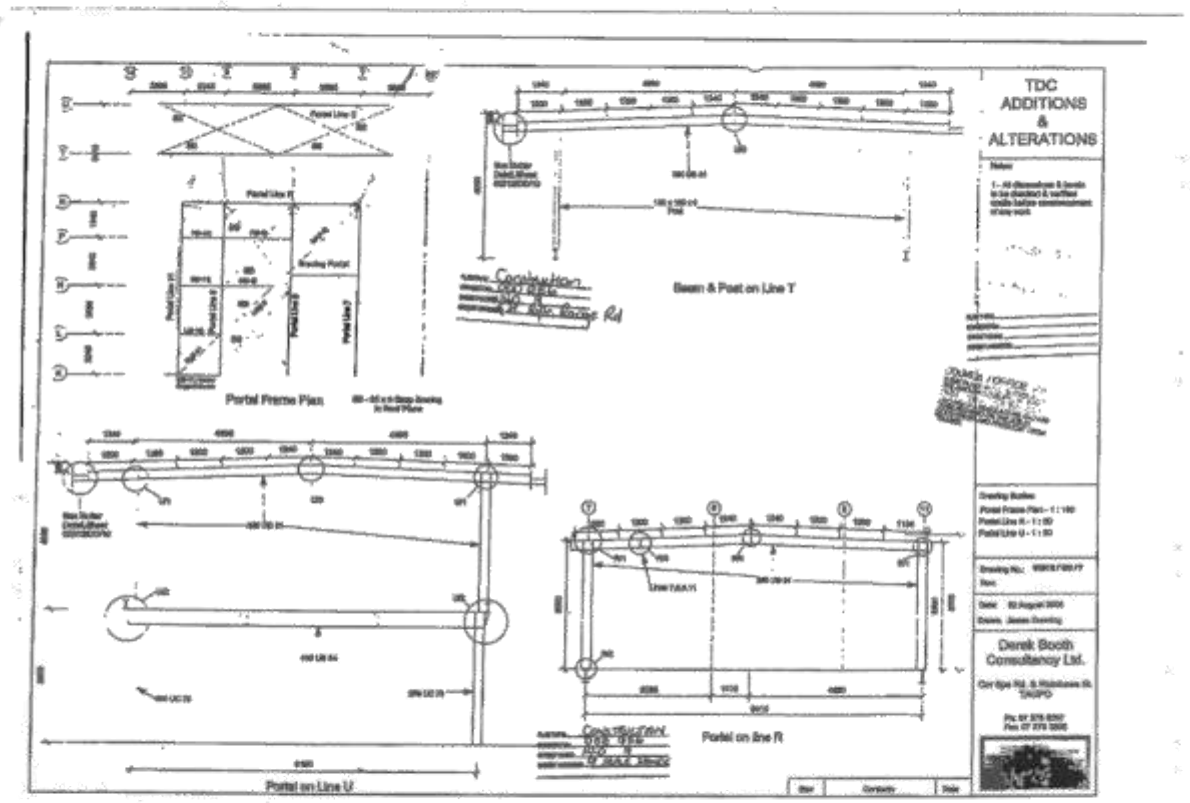

TDC
ADDITIONS
&
ALTERATIONS
Frame 1
Frame 1A
Frame 2
Bracing Frame
Derek Booth
Consultancy Ltd.
TAUPO

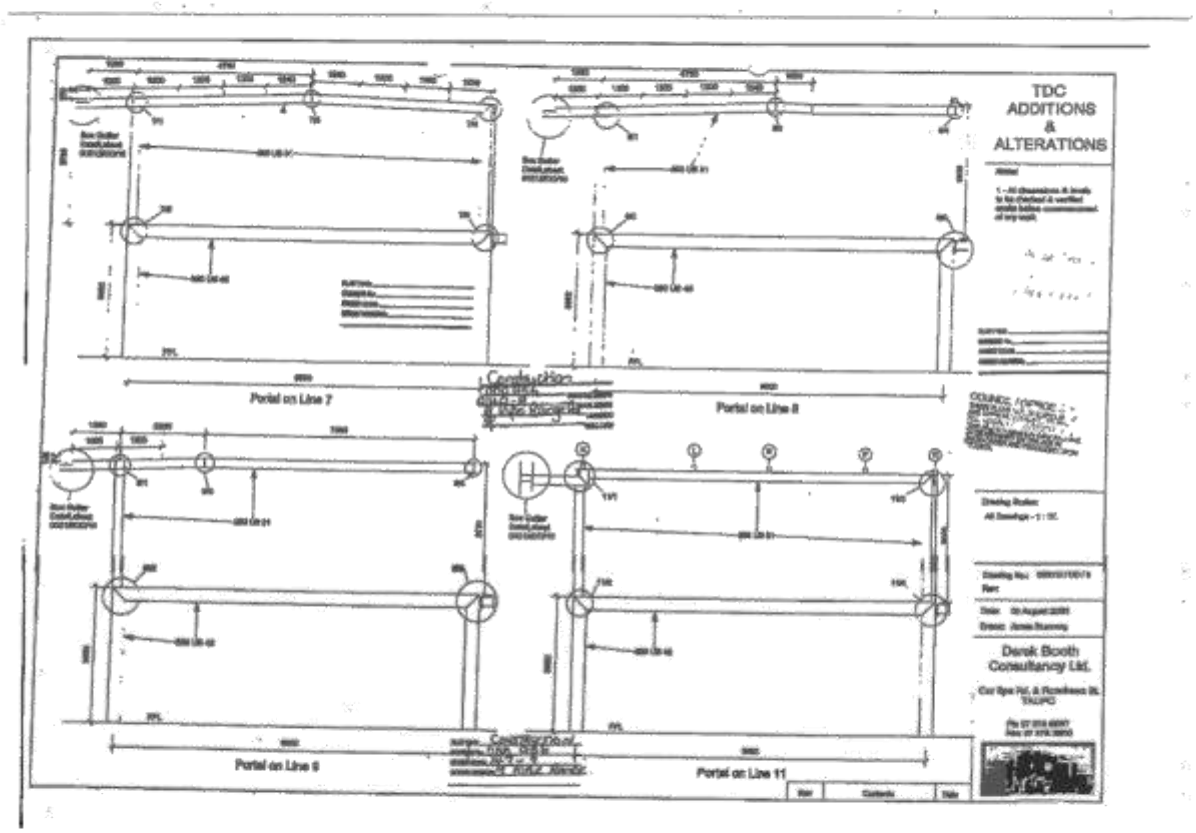

TDC
ADDITIONS
&
ALTERATIONS
Detail A - frame 2 & 3
(detail same for frame
1 & 4 but reversed)
Detail B - frame1A
Frame 3
DETAIL 'C'
Detail 'D'
Frame 4
DETAIL 'E'
SECTION 1-1
Derek Booth
Consultancy Ltd.

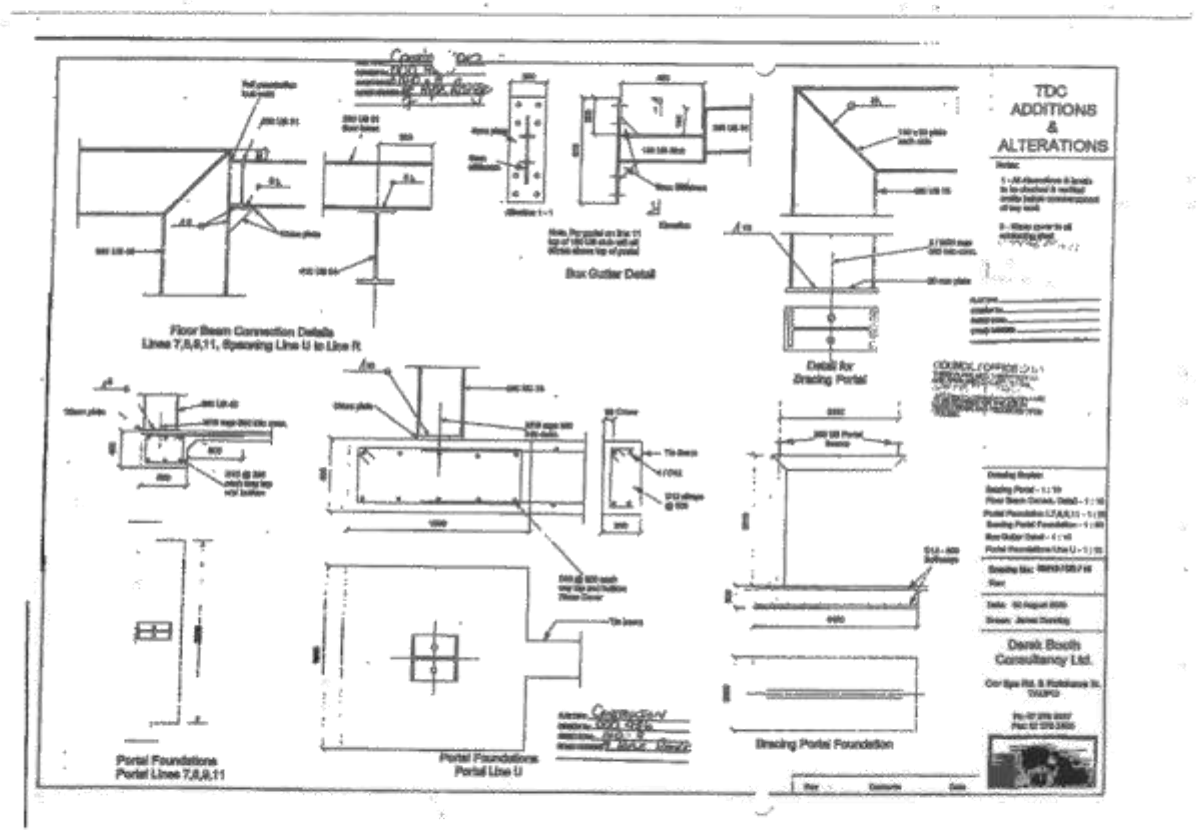

TDC
ADDITIONS
&
ALTERATIONS
Frame 6
Typical Column - Beam Connection Details
Section 1-1
Section 2-2
Details of Foundation " P1 "
Derek Booth
Consultancy Ltd.

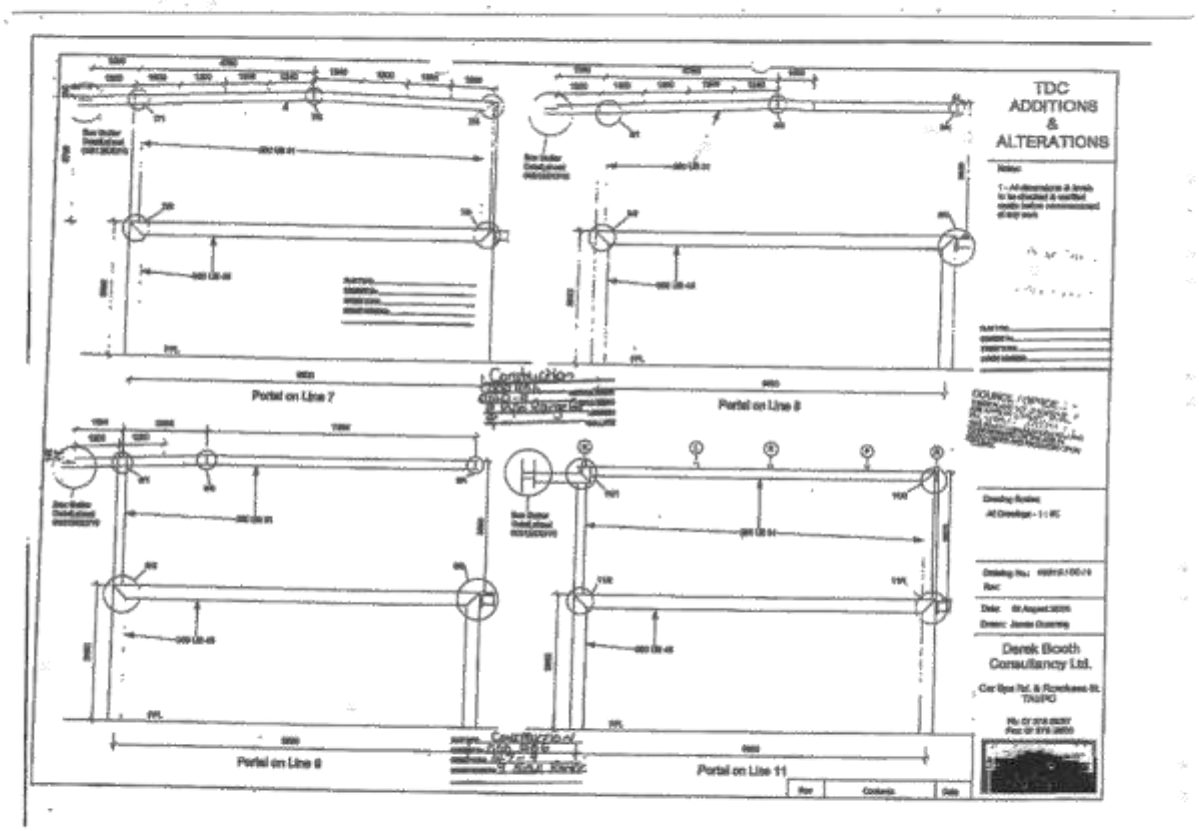

TDC
ADDITIONS
&
ALTERATIONS
Details of Foundation " F2 "
Details of Foundation " F3 "
Details of Foundation " F4 "
Derek Booth
Consultancy Ltd.

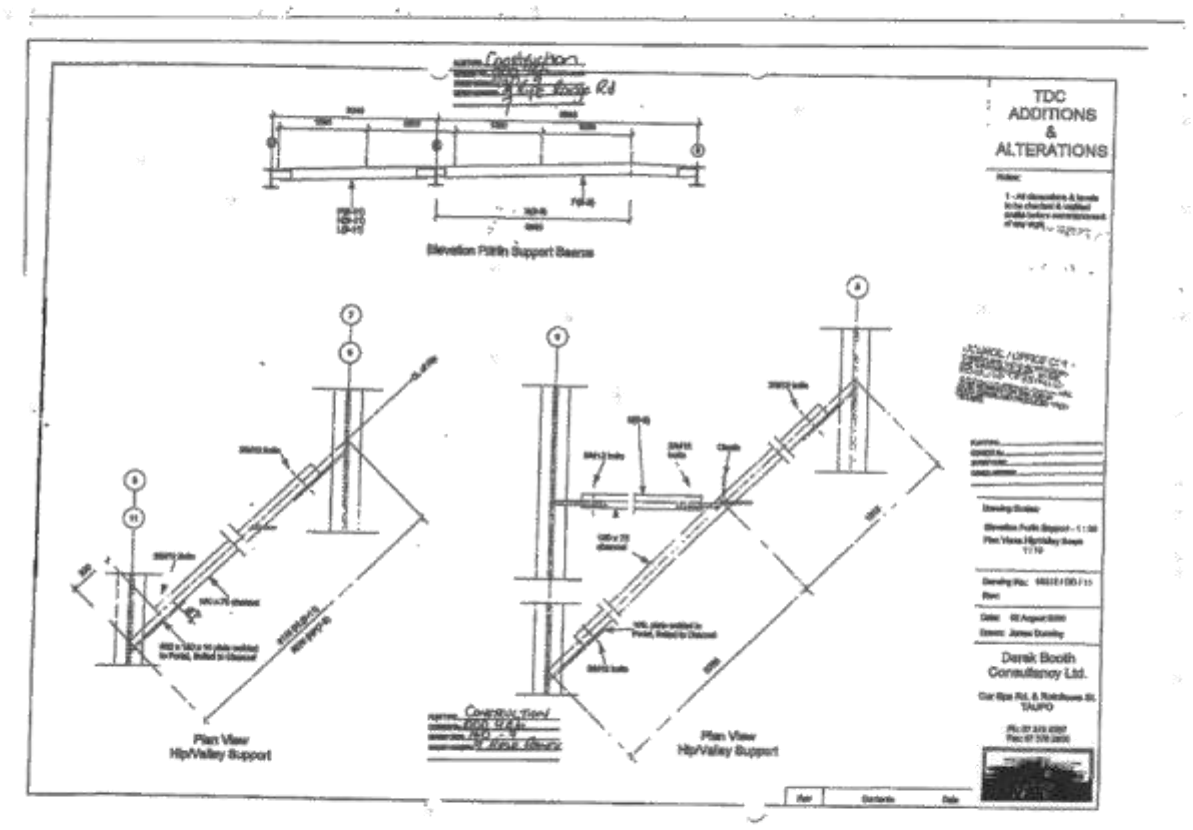

TDC
ADDITIONS
&
ALTERATIONS
Lift Foundation Plan
Lift Landing Plan
Section 2-2
Section 3-3
Section 1-1
Section - Plinths
Column - Base Plate
Derek Booth
Consultancy Ltd.

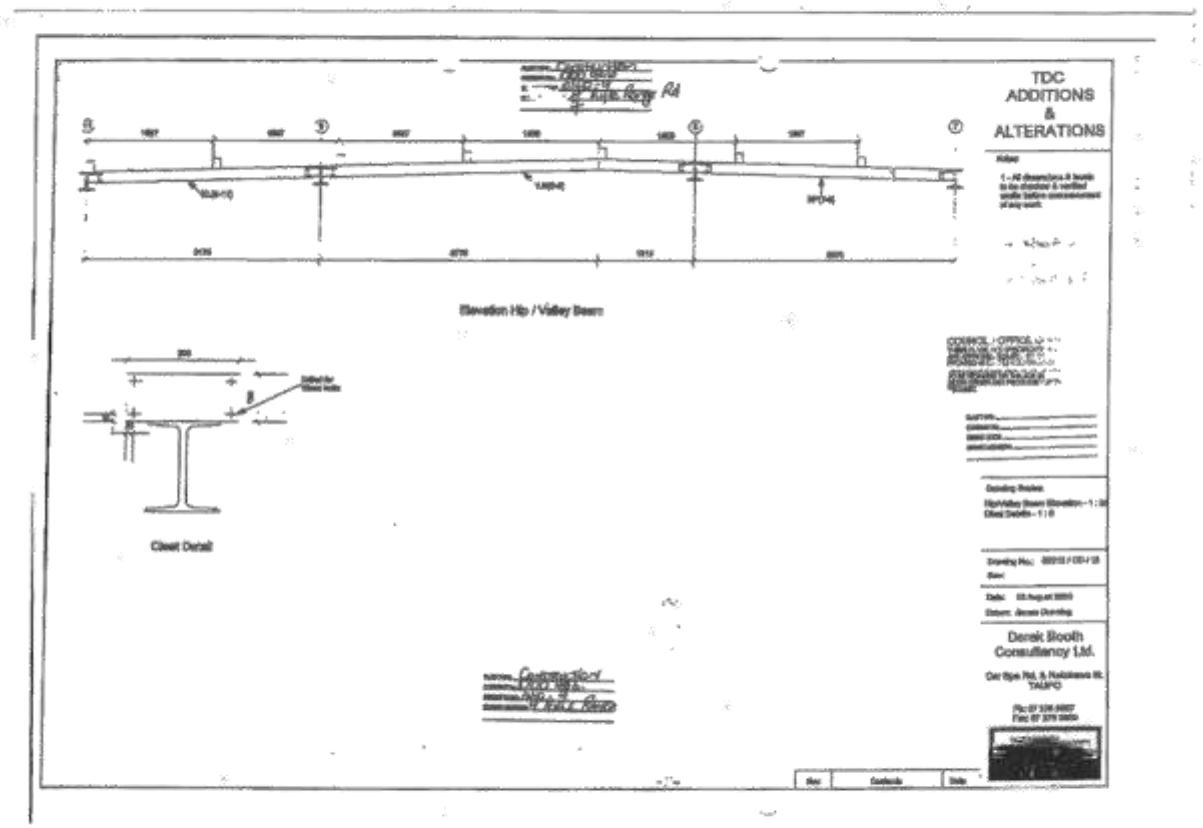

TDC
ADDITIONS
&
ALTERATIONS
Portal Frame Plan
Beam & Post on Line T
Portal on Line U
Portal on line R
Derek Booth
Consultancy Ltd.

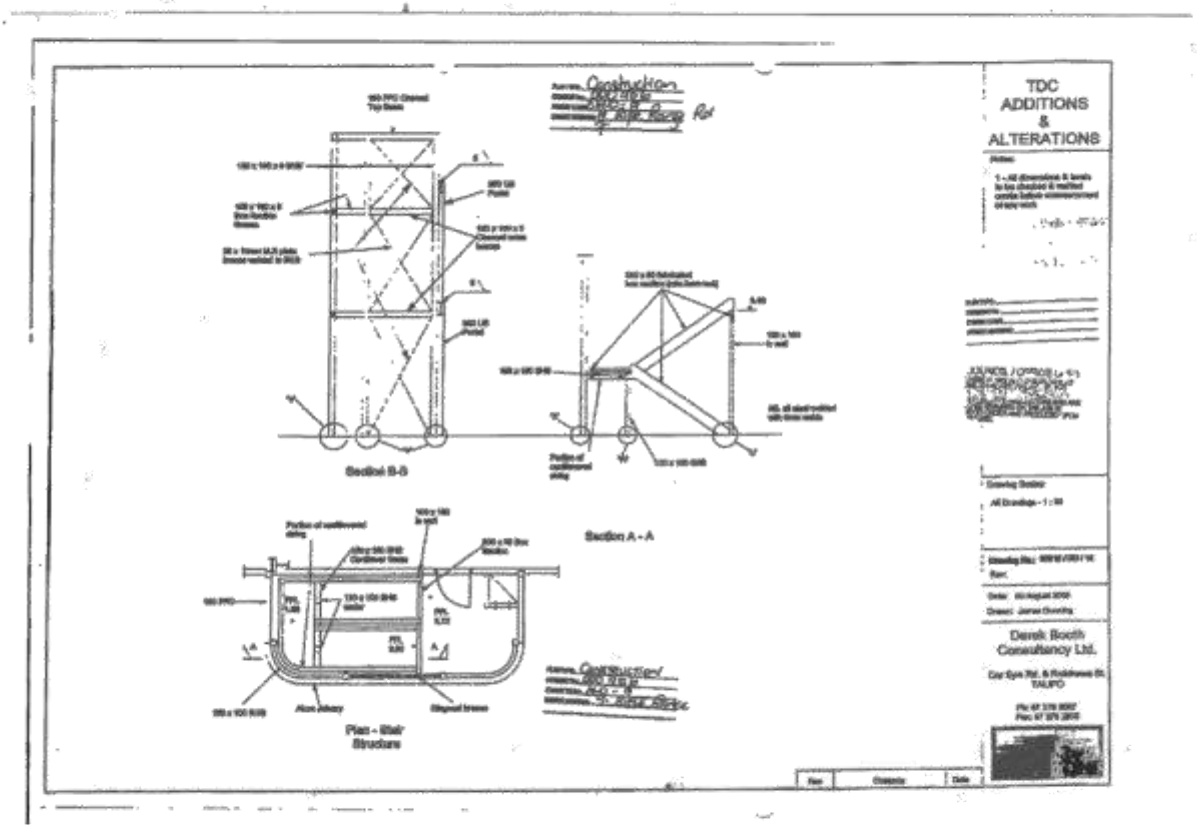

TDC
ADDITIONS
&
ALTERATIONS
Portal on Line 7
Portal on Line 8
Portal on Line 9
Portal on Line 11
Derek Booth
Consultancy Ltd.

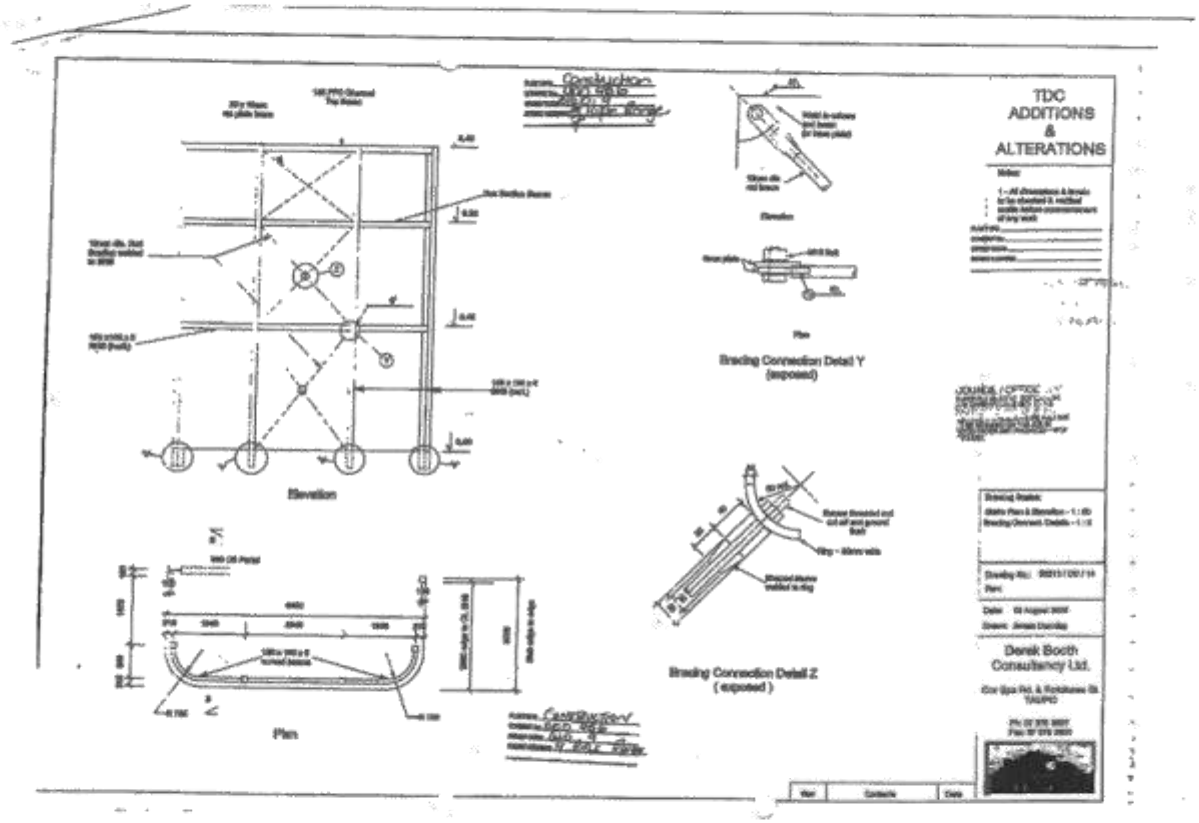

TDC
ADDITIONS
&
ALTERATIONS
Box Gutter Detail
Floor Beam Connection Details
Lines 7,8,9,11, Spacing Line U to Line R
Detail for
Bracing Portal
Portal Foundations
Portal Lines 7,8,9,11
Portal Foundations
Portal Line U
Bracing Portal Foundation
Derek Booth
Consultancy Ltd.

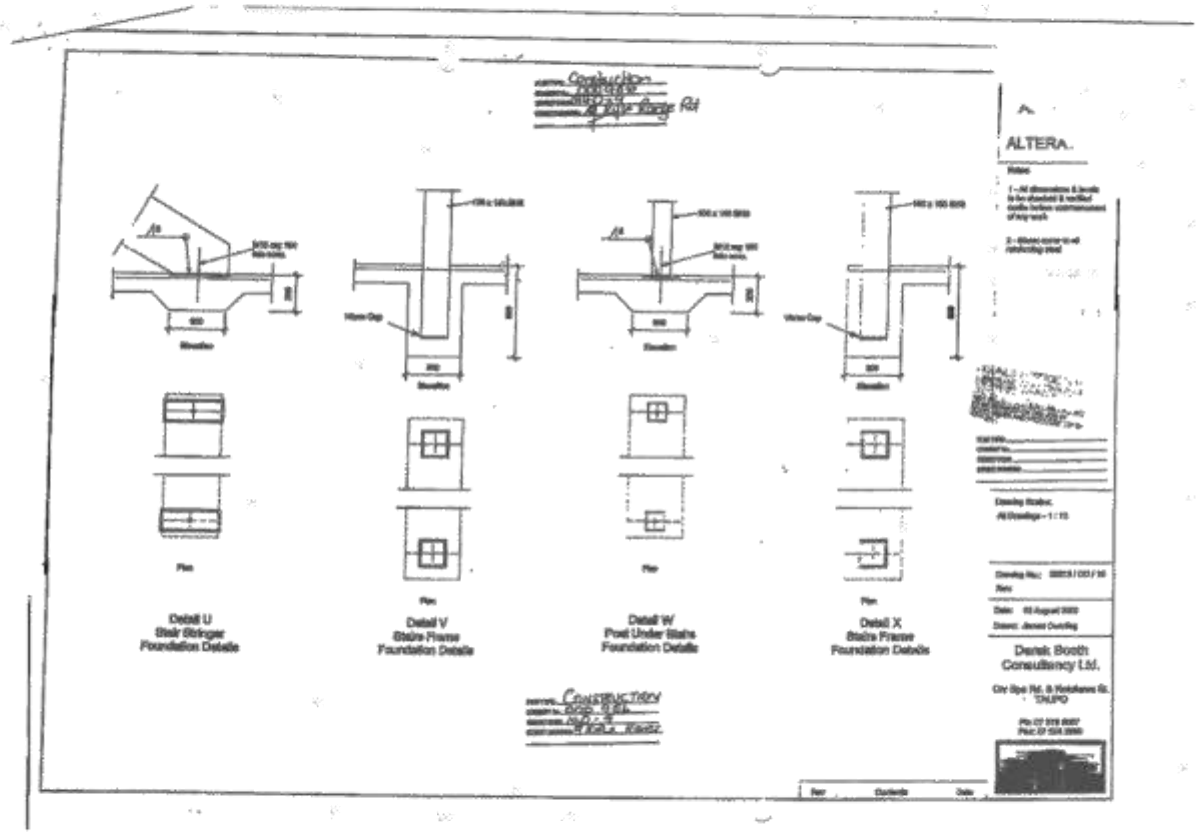

TDC
ADDITIONS
&
ALTERATIONS
Portal on Line 7
Portal on Line 8
Portal on Line 8
Portal on Line 11
Derek Booth
Consultancy Ltd.

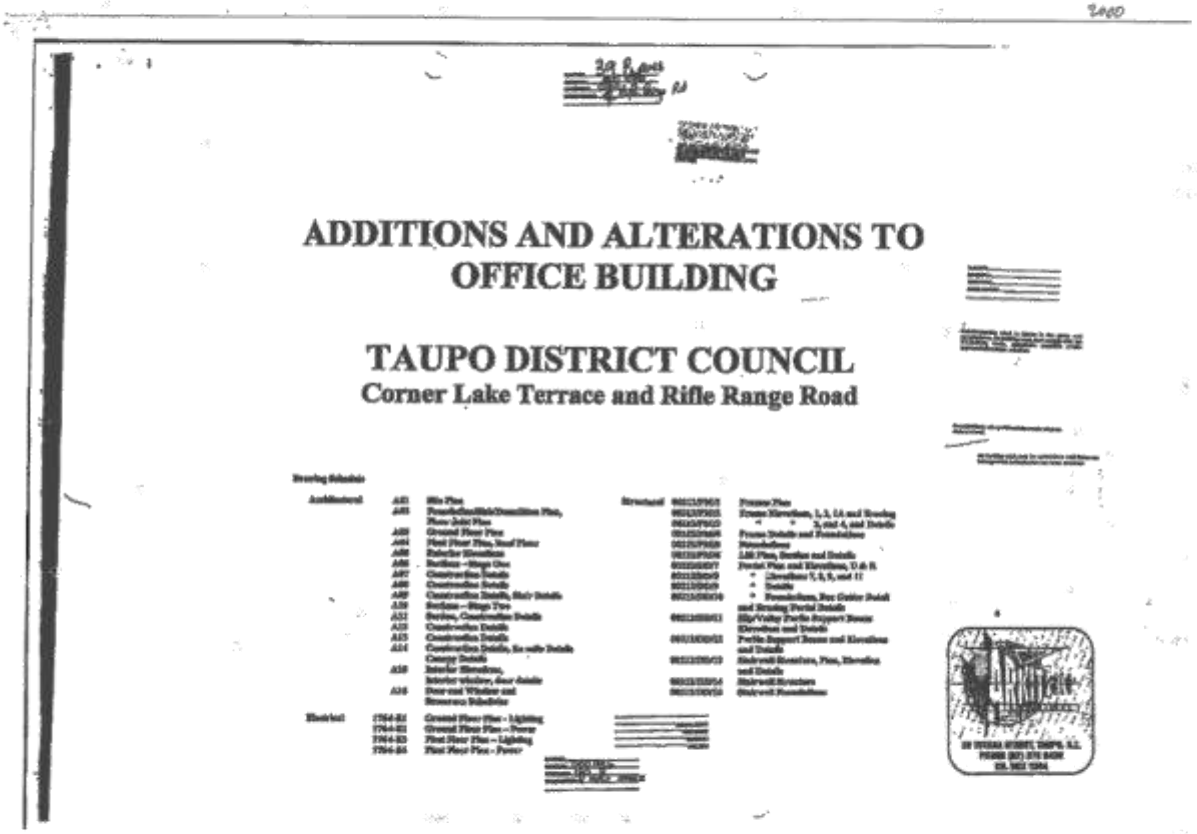

TDC
ADDITIONS
&
ALTERATIONS
Elevation Profile Support Beams
Plan View
Hip/Valley Support
Plan View
Hip/Valley Support
Derek Booth
Consultancy Ltd.


TDC
ADDITIONS
&
ALTERATIONS
Elevation Hip / Valley Beam
Cleat Detail
Derek Booth
Consultancy Ltd.


TDC
ADDITIONS
&
ALTERATIONS
Section B-B
Section A - A
Plan - Stair
Structure
Derek Booth
Consultancy Ltd.


TDC
ADDITIONS
&
ALTERATIONS
Bracing Connection Detail Y
(exposed)
Elevation
Plan
Bracing Connection Detail Z
(exposed)
Plan
Derek Booth
Consultancy Ltd.

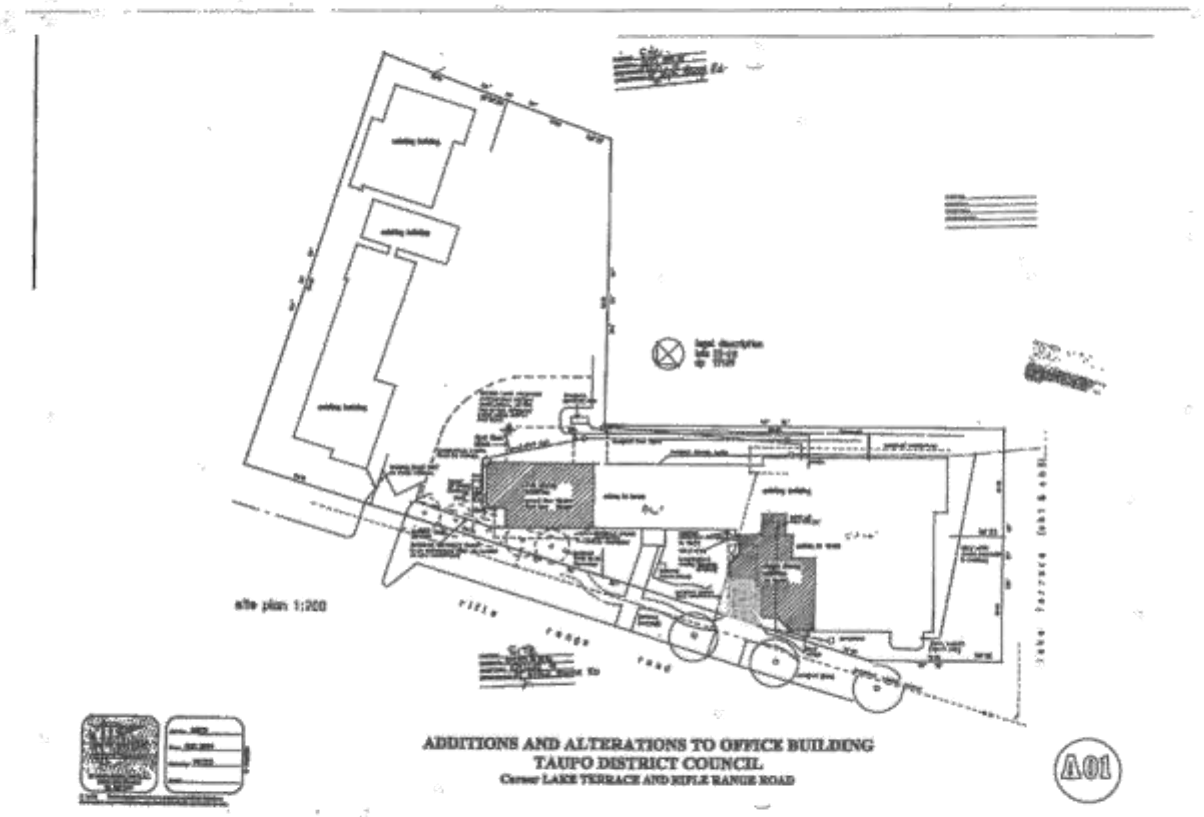

ALTERA.
Detail U
Stair Stringer
Foundation Details
Detail V
Stairs Frame
Foundation Details
Detail W
Post Under Stairs
Foundation Details
Detail X
Stairs Frame
Foundation Details
Derek Booth
Consultancy Ltd.

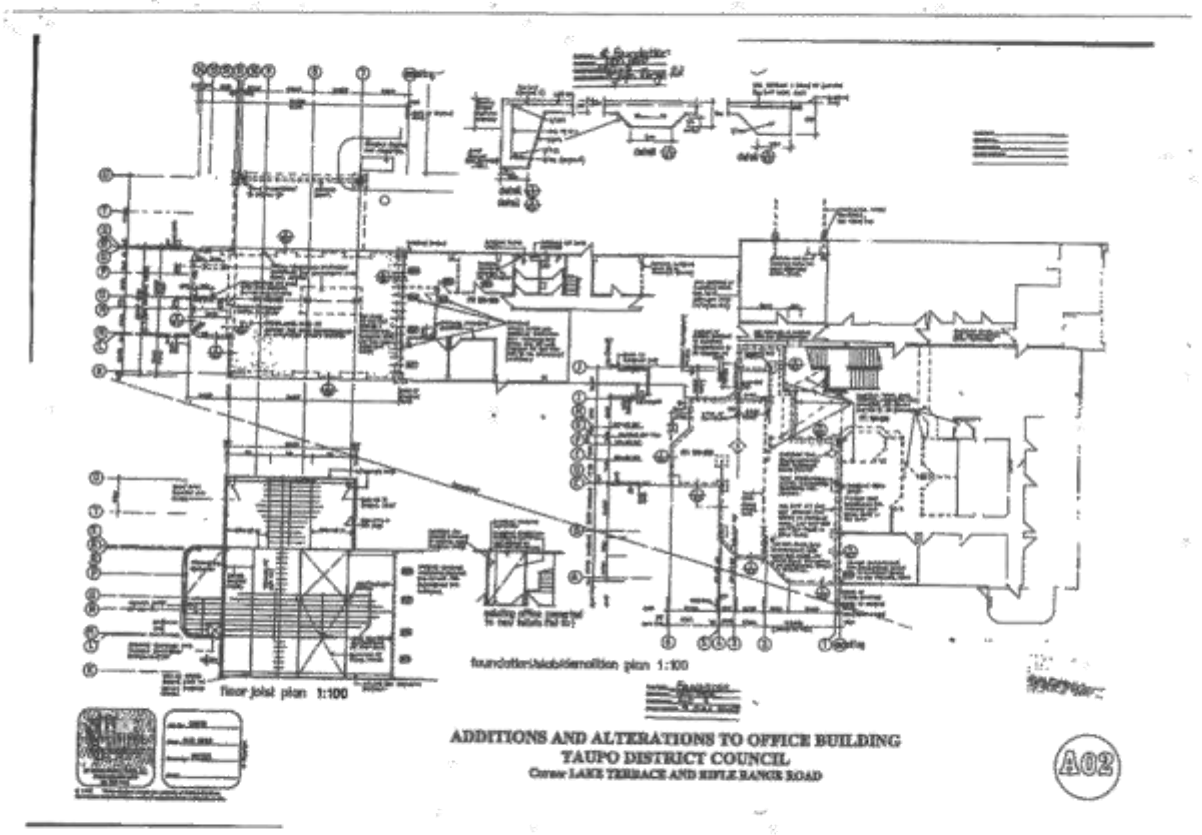


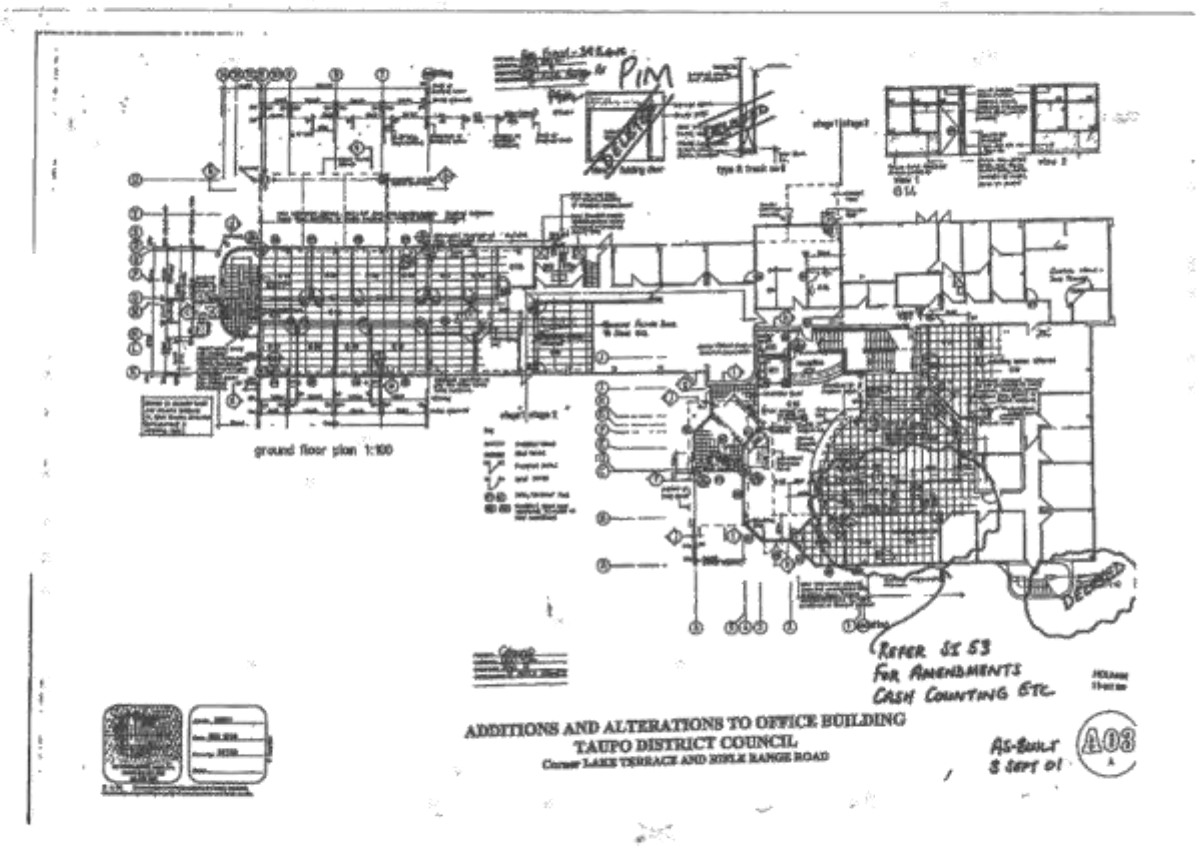
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING

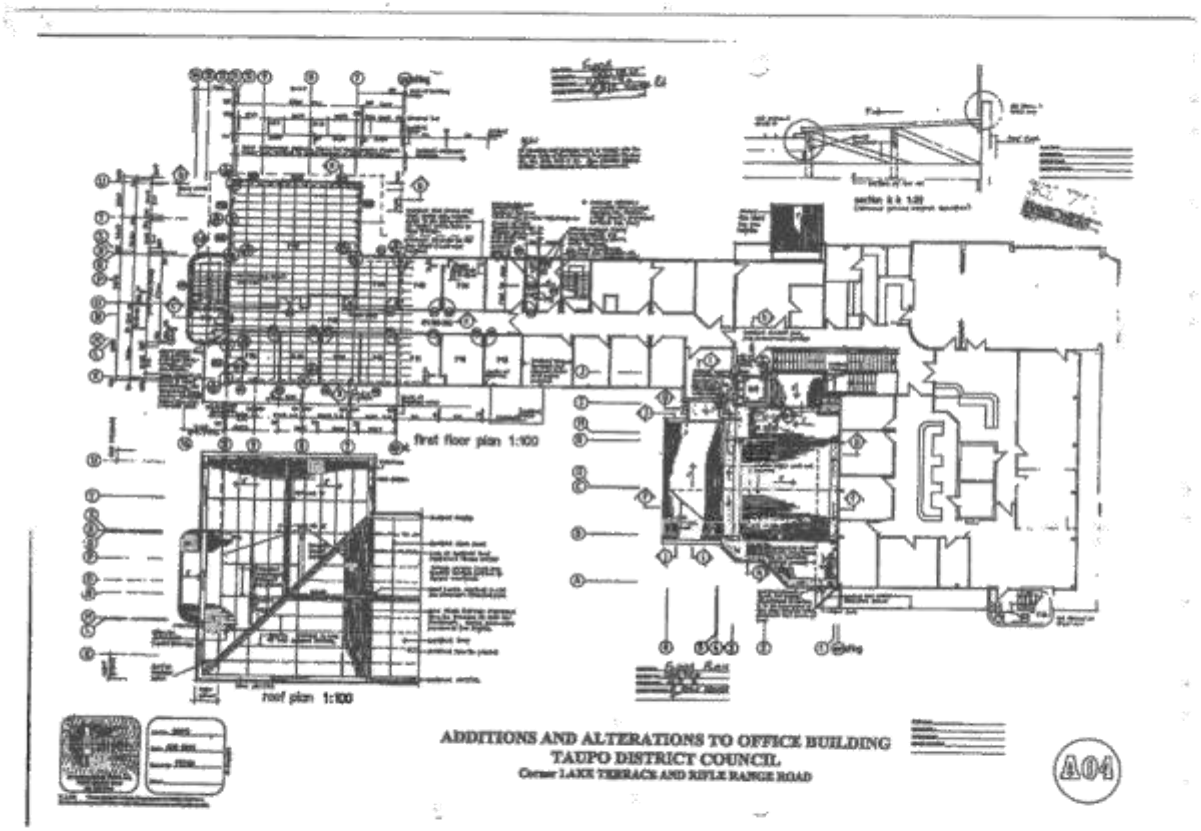
TAUPO DISTRICT COUNCIL

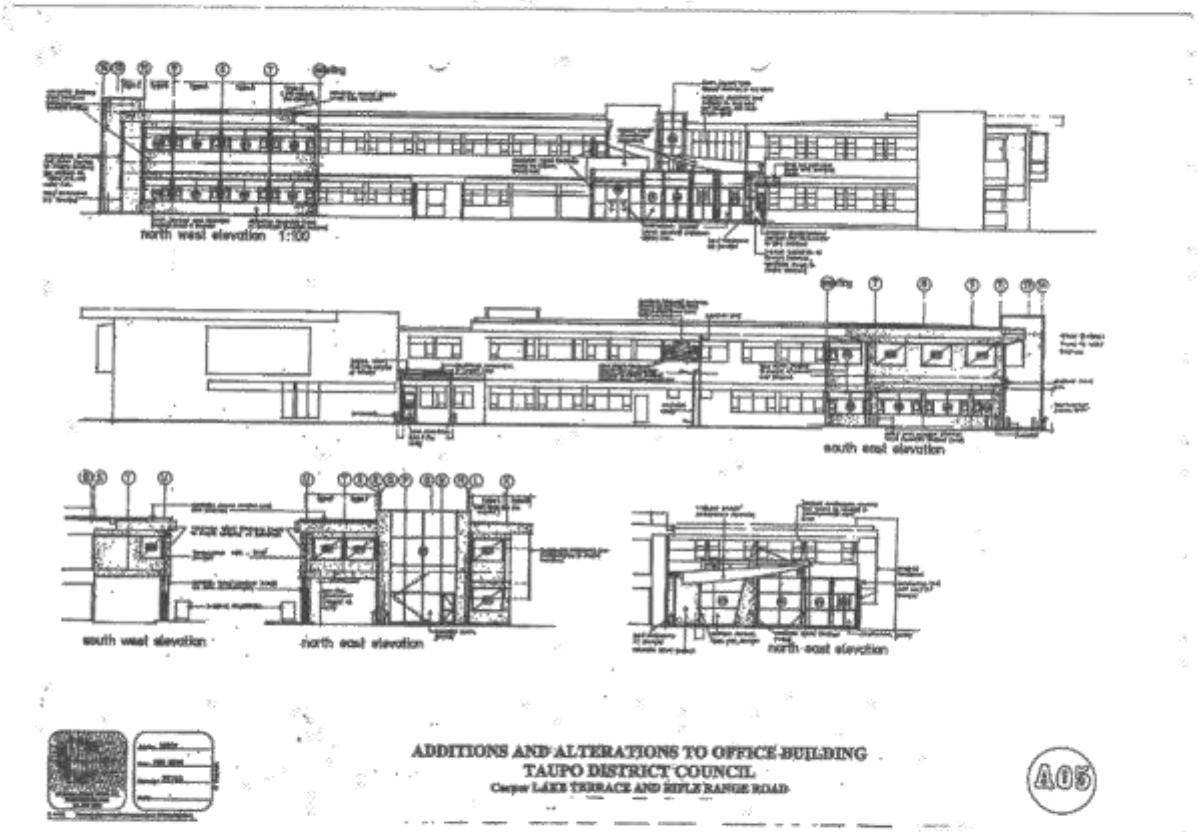
Corner Lake Terrace and Rifle Range Road

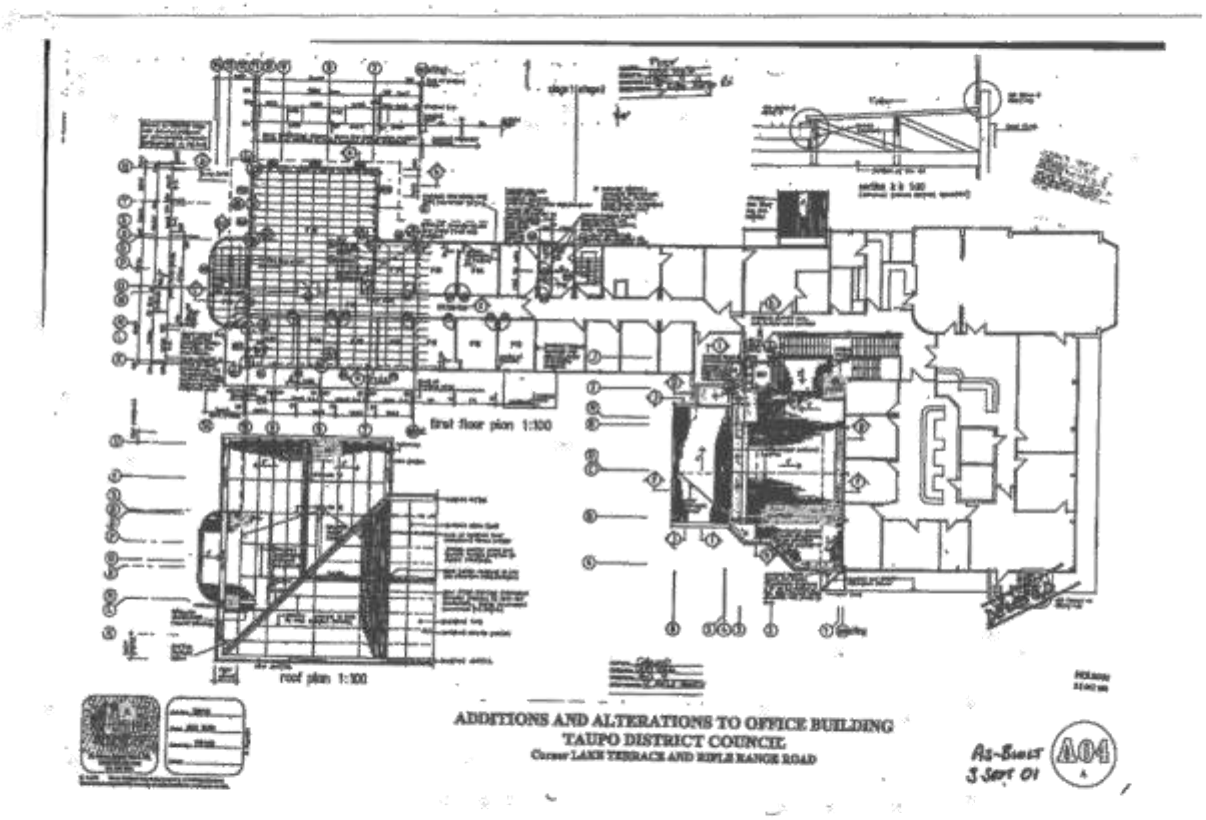

site plan 1:200
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A01

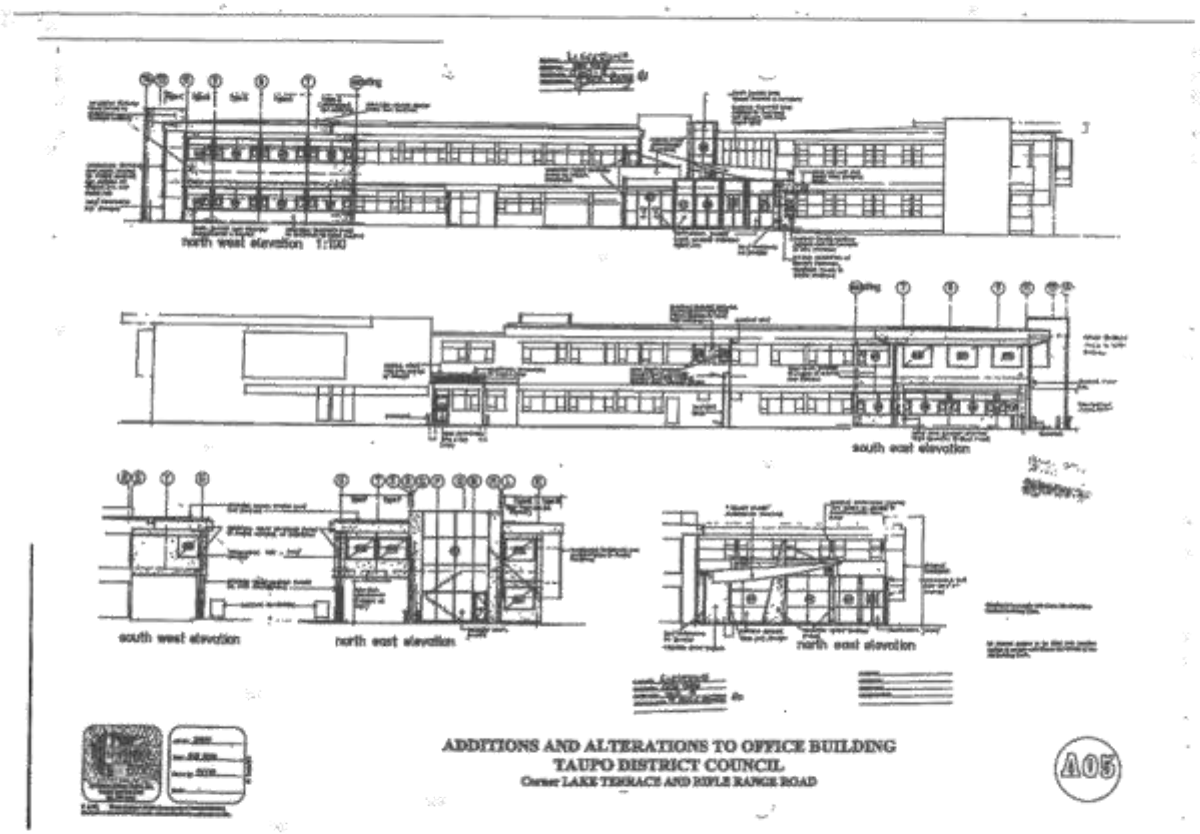

floor joist plan 1:100
foundation/slab/demolition plan 1:100
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A02

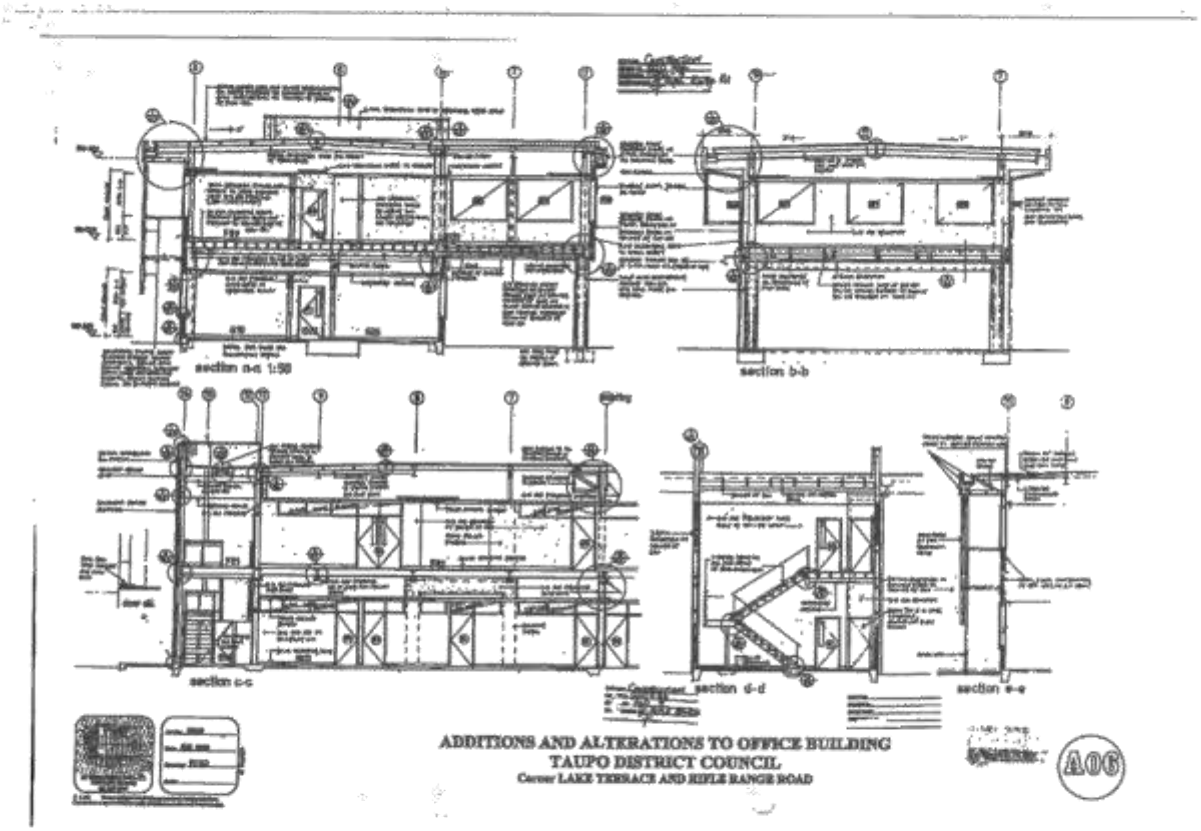

PIM
ground floor plan 1:100
REFER SK 53
FOR AMENDMENTS
CASH COUNTING ETC.
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND HOKIA RANGE ROAD
AS-BUILT
3 SEPT 01
A03

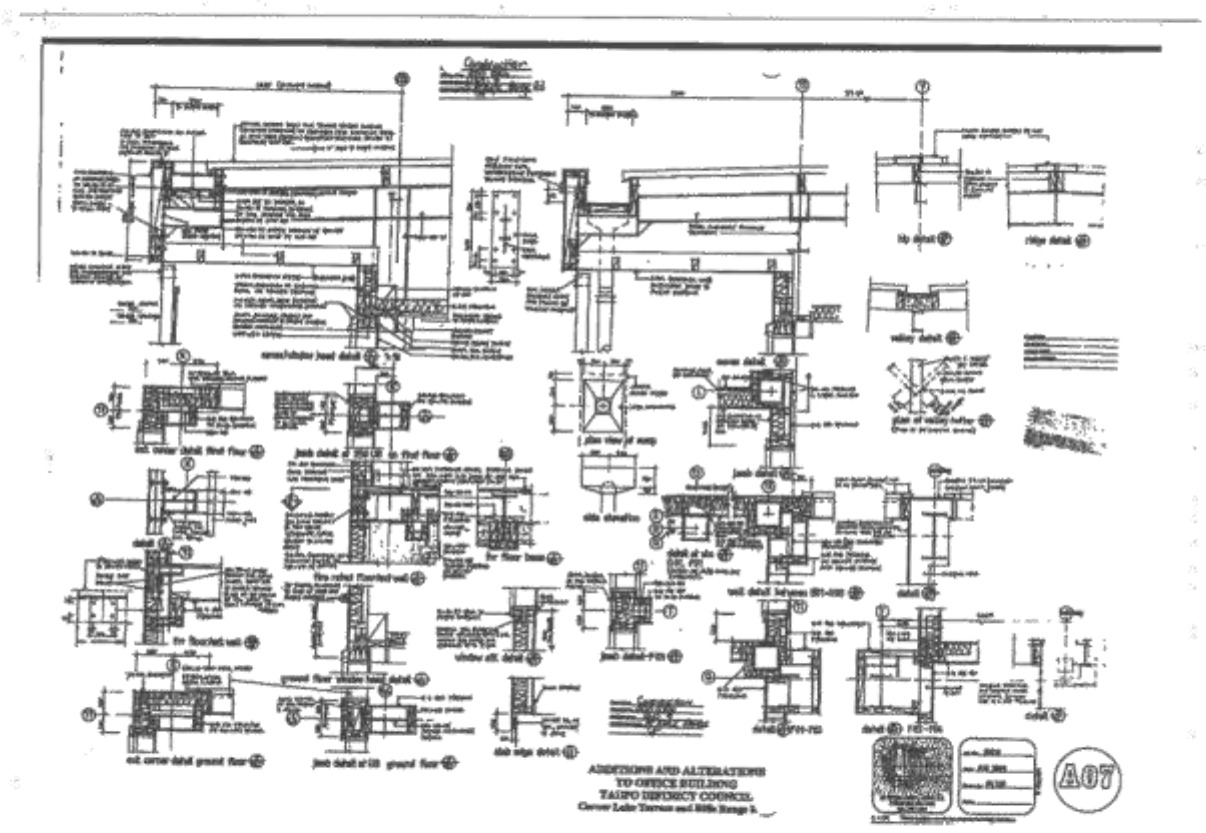

first floor plan 1:100
roof plan 1:100
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A04

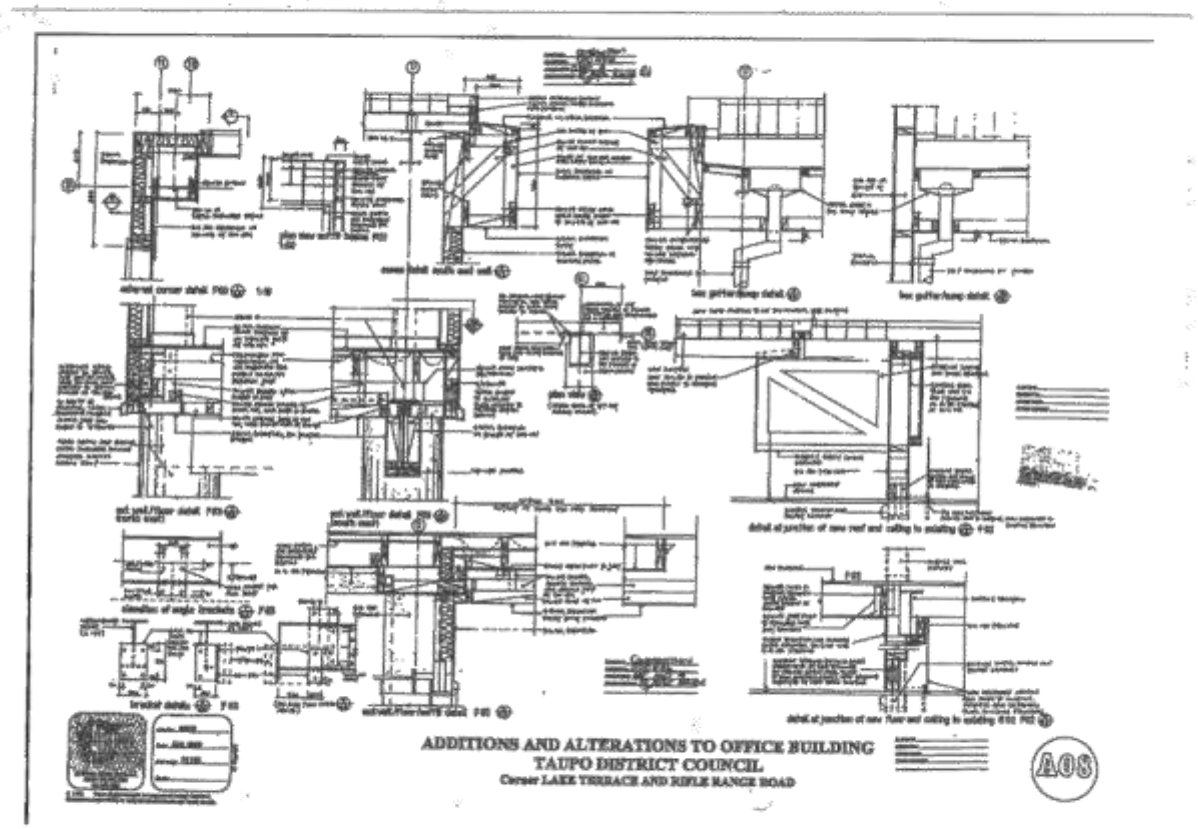

north west elevation 1:100
south east elevation
south west elevation
north east elevation
north-east elevation
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A05

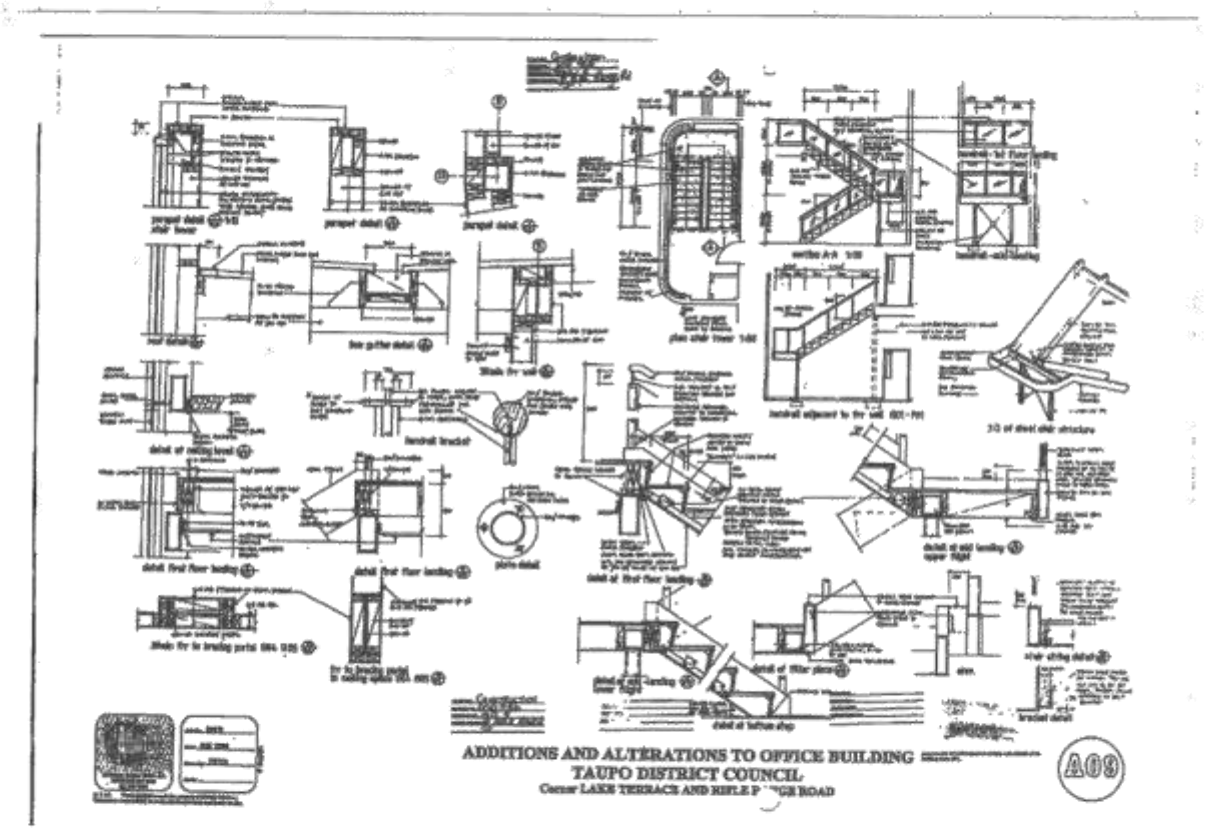

first floor plan 1:100
roof plan 1:100
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A1-Sheet
3 Sept 01
A04

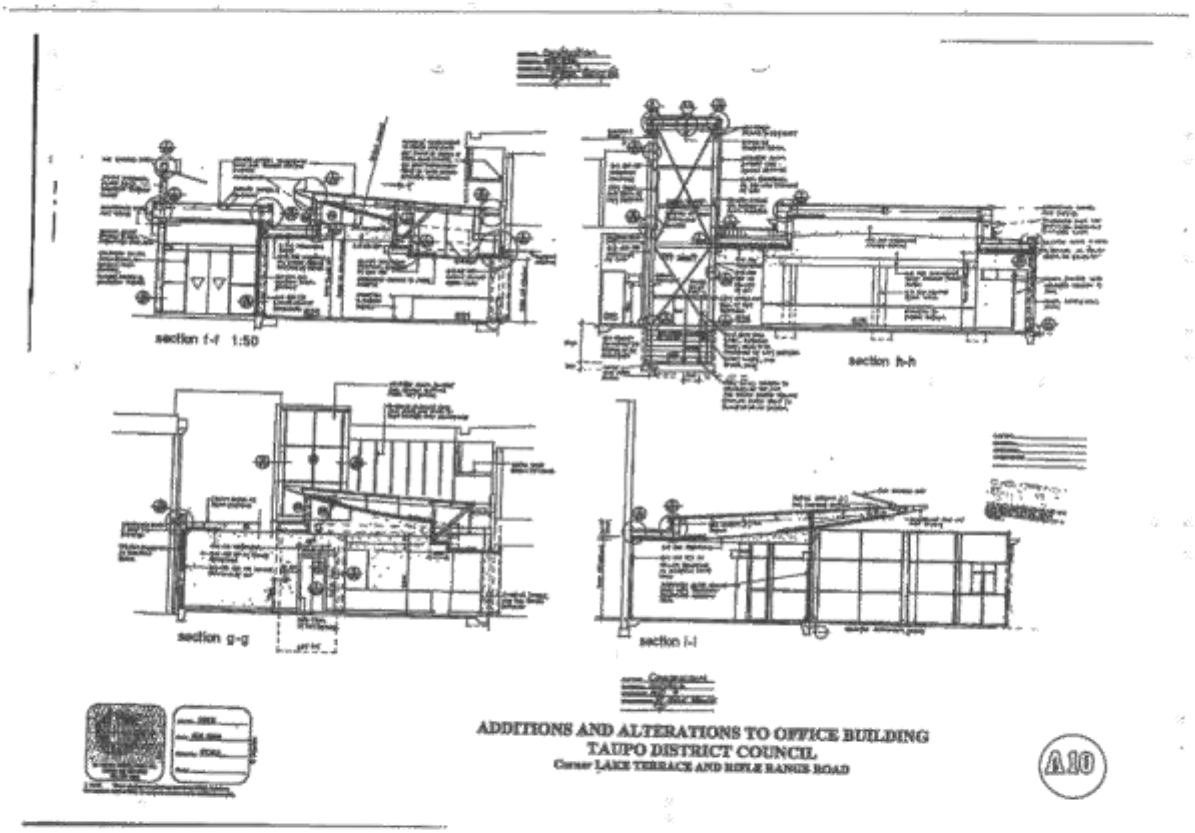

north west elevation 1:100
south east elevation
south west elevation
north east elevation
north east elevation
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A05


section a-a 1:50
section b-b
section c-c
section d-d
section e-e
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A06


ADDITIONS AND ALTERATIONS
TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
A07


ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A08


ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
A09


section f-f 1:50
section h-h
section g-g
section i-i
ADDITIONS AND ALTERATIONS TO OFFICE BUILDING
TAUPO DISTRICT COUNCIL
Corner LAKE TERRACE AND RIFLE RANGE ROAD
A10

Attachment 6

Photos from 20 July Site Visit - 1968 Building Connections

Sliding Stair Connection

Strongroom at First Floor - Embedded Steel Beam

Top of Strongroom

Typical Roof to Wall Connection

applied innovation

cheal

OUR REF 17100L1

28 March 2017

Boon Goldsmith Bhaskar Brebner Team Architects Ltd
131 Courtenay Street
NEW PLYMOUTH 4310

ATTENTION: MURALI BHASKAR

Email: m.bhaskar@bgbb.co.nz

Dear Murali

72 LAKE TERRACE, TAUPO : SEISMIC STRENGTHENING PRELIMINARY ASSESSMENT

The following letter summarises the preliminary assessment completed on the existing Taupo District Council office buildings with regards to seismic strengthening required to bring the structures up to at least 67%NBS. The Initial Seismic Assessment completed by Beca has scored the structure at 50% NBS (Grade C) for Importance Level (IL) 2. This is a worst case score for the entire structure and only takes into account the original (oldest) structure containing the Council chambers since this would result in the lowest seismic rating. Consequently, the entire structure receives the same score.

However, a further assessment indicates that for an IL2 designation, only the original building would require strengthening. The other subsequent structures/additions would individually score higher than 67%NBS in their current condition.

The proposed strengthening required to bring the original structure up to at least 67%NBS consists of 6 steel portal frames placed strategically throughout the structure and primarily along the perimeter of the building. These portals would need to be double portals to strengthen both floors. Alternatively, a braced frame system could be used but the impact on the use of the structure and the overall cost would be similar. These works would result in fairly extensive secondary works to remove and repair floors, walls, ceilings, and linings and provide connections as required from floor joists, beams and bearers. The portals would also require separate concrete pad footings. A mark-up of the building is attached with indicative portal locations and sizes for strengthening to 67%NBS for an IL2 structure.

It is possible that pending a more detailed analysis of the structure and required strengthening that further strengthening is required (unlikely to be less). For instance, the central concrete core is deemed to be adequate for the bracing in this area. However, this may not be the case, pending a more detailed analysis or pending removal of linings in the vicinity (for refurbishment) and being able to more easily see the structural mechanisms. It may well be that the required strengthening is only marginally cheaper than a new structure and would still result in a lower seismic rating.

Should Council require the building(s) to be rated as IL4 structures, strengthening to all structures would almost certainly be required as this has a significant effect on the %NBS – approximately half of the IL2 score. The strengthening proposed above for an IL2 structure would not be sufficient to bring this building up

above the 67% threshold desired by Council. Further strengthening would almost certainly be cost prohibitive and may prove to be physically impractical due to the extensive works required.

The other more recent structures and additions would likely need to be strengthened as shown on the attached mark-up for IL4 structures. This may include strengthening of the knee joints of 9 existing portals in the transverse direction and the construction of 4 or 5 new portal frames in the longitudinal direction. Again, since individual assessments of the further additions has not been completed, the extent of strengthening required for each individual structure/addition may vary pending a more detailed analysis.

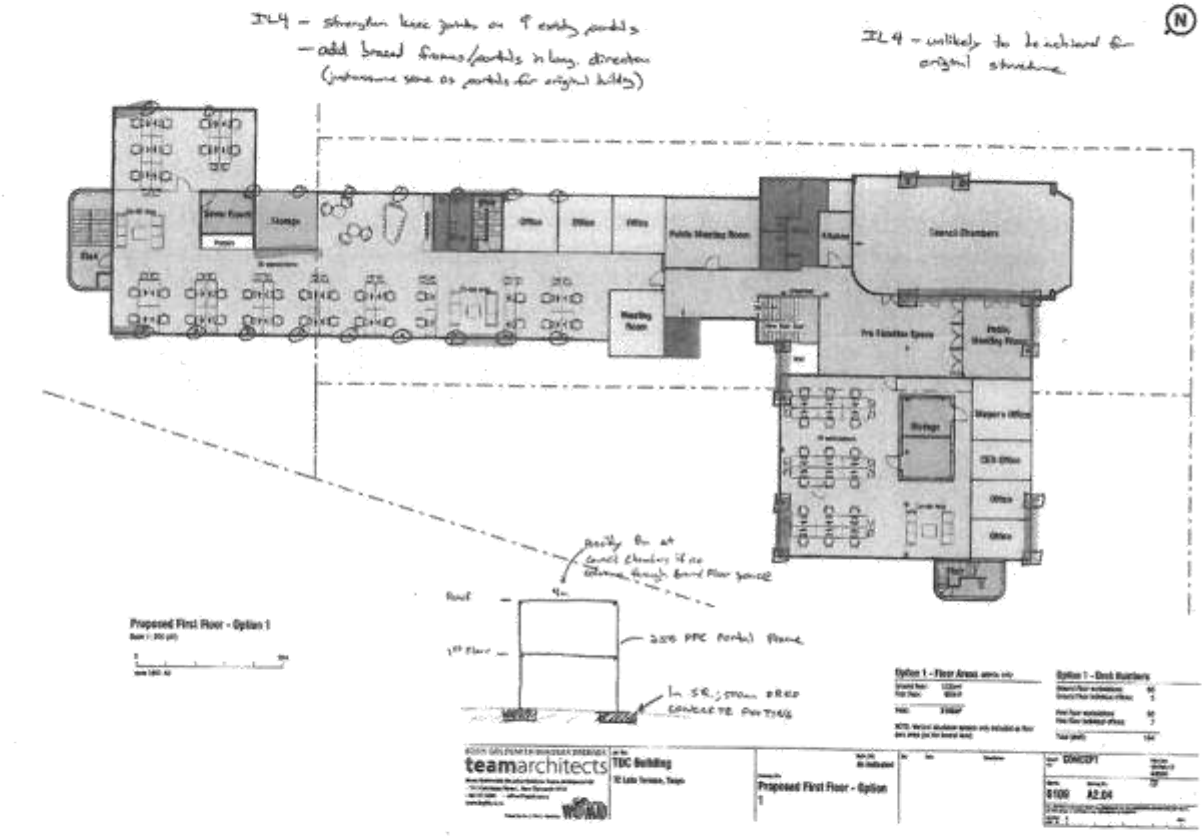
In summary, should IL4 be desired, a new structure is recommended—certainly for the older, original structure but also for the subsequent additions. The resulting performance of a new structure will be much greater than a retrofitted/strengthened older structure and will perform as an integrated system rather than a patchwork of various systems. In addition, the cost of strengthening (in terms of dollars and time) is likely to be marginally cheaper, if at all, and will still result in a reduced capacity structure when compared to new. In the case, of the original building. It is unlikely to be feasible to achieve an IL4 structure at 67%NBS, regardless of strengthening.

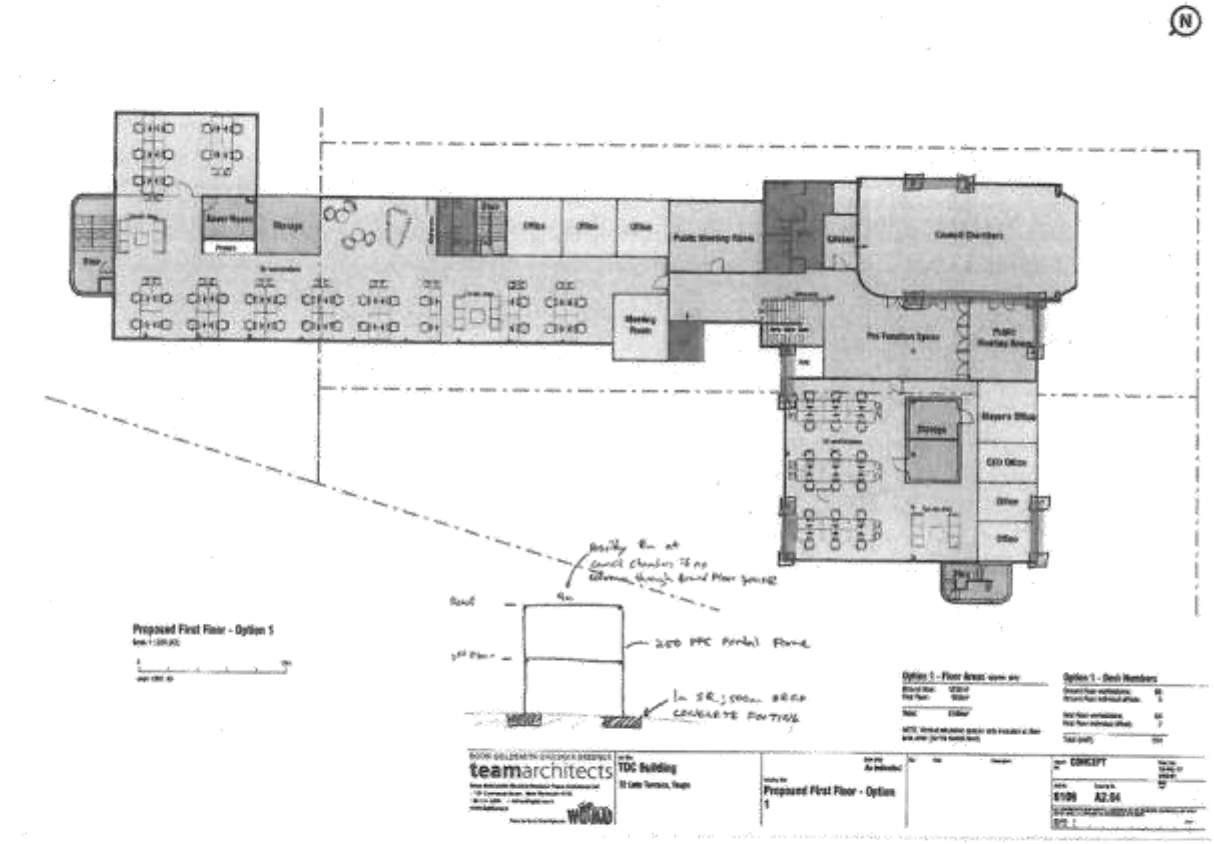
Yours sincerely

THOMAS BRAND
ENGINEERING MANAGER, CPENG, INTPE
Email: thomasb@cheal.co.nz

Enclosures:

1. Strengthening Mark-up for IL2
2. Strengthening Mark-up for IL4


IL4 – strengthen knee joints on 9 existing portals
– add braced frames/portals in long. direction
(performance same as portals for original building)
IL4 – unlikely to be achieved for original structure
N
Proposed First Floor - Option 1
Roof
1st Floor
teamarchitects
TDC Building
Proposed First Floor - Option
1
CONCEPT
A2.04


N
Proposed First Floor - Option 1
TDC Building
Proposed First Floor - Option 1
CONCEPT
A2.04

AHI Carrier (NZ) Ltd
A Carrier Joint Venture Company

Napier Branch Office
PO Box 3254 | Napier 4142
Tel +64 06 561 1005
Fax +64 06 843 9379

Condition Report Date: 24/1/17

Taupo District Council
72 Lake Terrace
Taupo

Attention: Garreth Robinson

RE: Air Conditioning of Main Building.

Dear Garreth

History Summary

The air conditioning in the Taupo District Council building is divided into two main areas when AHI-Carrier Ltd started the maintenance in 2007.

The original building has two floors and is parallel with the lake. It contains the mayoral chambers and council offices on the top floor and customer services on the ground floor. These were air conditioned by a large air handler in the ground floor plantroom.

Back Office

This area for the building has two floors and is parallel with Rifle Range Road. It contains the administration, planning and support offices. The air conditioning was supplied by two (2) Temperzone air handlers on the roof with supply and return ducting through the building. An additional section was added to this building and the air conditioning was by four (4) additional ducted units.

Front Office Air Conditioning Upgrade

In early 2013, the air handlers were removed and new ducted, cassette and Hi-wall units were installed throughout the offices. Tempered fresh air was ducted to the offices to meet the building code.

Issues Identified from the Front Office Upgrade.

The units supplied are from Panasonic NZ. It is doubtful that the units selected are commercial rated. The units are in operation for 12 hours a day compared to a domestic unit that operates occasionally.

Head Office 207-211 Station Road, Penrose, Auckland 1061
Private Bag 92128 Victoria St West Auckland 1142 Ph: +64 9 355 6720 | Fax: +64 9 355 6735
www.ahi-carrier.co.nz

CUSTOMER SERVICE FREECALL - 0800 800214 | CUSTOMER SERVICE FREEFAX - 0800 800217
SPARE PARTS FREECALL - 0800 800218 | SPARE PARTS FAX- 09 355 6738 | GENERAL FREECALL - 0800 AIRCON

The large ducted unit for the ground floor offices struggles to supply a consistent temperature to the many offices due to grille location and selection. The existing ducting was retained during the upgrade and doesn't account for the changed office layout.

Due to ongoing issues with temperature control the administration corner office has been removed from the central system and has individual split units installed to create a more comfortable environment for the staff. There are ongoing issues with the other offices as there is not an independent control of heating or cooling. This is made worse by the solar gain from the sun's location at different times of the day.

The upstairs offices have a mixture of single split units for areas like the council chambers and the mayor's office. The four offices on the north aspect are serviced from a single ducted unit. The offices are affected by the sun at different times of the day which has some offices requiring heating and the other need cooling. This cannot be achieved with a single unit and is causing staff complaints. The issue with this system is that all the indoor units either heat or cool at the same time. You can't heat one office and cool the office beside you.

The installation called for a separate filtered, tempered fresh air system to the ground floor and top floor. The importance of tempering the air is to ensure the air entering the air conditioning system is above 16°C. In the winter the outside air can be as low as -5°C which is entering the building causing issue such as drafts and ice forming on the air conditioning coils resulting in poor performance and reduced heating output capacity.

The original installation included the filtered fresh air but the electric duct heaters were not installed. AHI-Carrier Ltd has installed a 9kW electric duct heater on the ground floor fresh air system but as yet the top floor has not been completed.

The filters for the top floor fresh air system were installed in a non-standard way. Access to the filters is from the roof and the large roof fan has to be removed to access the filters. This has now been rectified.

The Panasonic outdoor units have been installed on the roof on timber frames. The anchor bolts through the roof have started to wear and the roof is leaking water to the ceiling below. A better solution is to install all the outdoor units on Monkey Toe mounts.

The front office air conditioners are not under a central control system. To use energy wisely, most buildings have a system that can schedule the air conditioning to start times and finish times. This also has after hours and holiday functions. It also ensures that units are not left operating after hours.

Back Offices Air Conditioning.

This building was originally made up of many small offices with supply and return air grilles in each office. The air was connected to a common duct system and supplied from two Temperzone air handlers on the roof. Each floor is supplied by its own AHU. In addition, the back section of the building was extended and 4 independent ducted systems were added into the space. These have been replaced as these were operating on R22 refrigerant.

The last upgrade of the offices resulted in many of the office walls being removed allowing for a more open plan arrangement. The changes resulted in the main air system from each floor being affected by the existing ducted systems, ie fighting each other. Also, controlling the temperature in the large space and in small offices was challenging from the one supply system.

A few years ago the two Temperzone air handlers were replaced as they were on the now redundant R22 refrigerant and were at the end of their economic life. The original Temperzone units were rated at 30kW Cooling and were fixed speed (the fan does not ramp up and down). These were replaced with Temperzone 40kW fixed speed two-stage compressor units instead of inverter stage compressors. The two stage system means large amounts for heating or cooling are being used to control temperature in the offices which is very challenging and has ongoing issues throughout the year. Inverter controlled compressors allow for infinite control of the heating or cooling load in the offices. A 2-stage system is normally selected when costs are a major constraint.

Over the past 18 months we have been assisting the TDC Facilities Manager to look at solutions to better control the temperature in the office spaces. Some smaller offices were removed from the main system and were given individual split units as comfort control was very difficult. The selected units were from the Toshiba Commercial range; they have a 24/7 day wired wall controllers and have the ability to be connected to a future building BMS for optimum energy efficiencies.

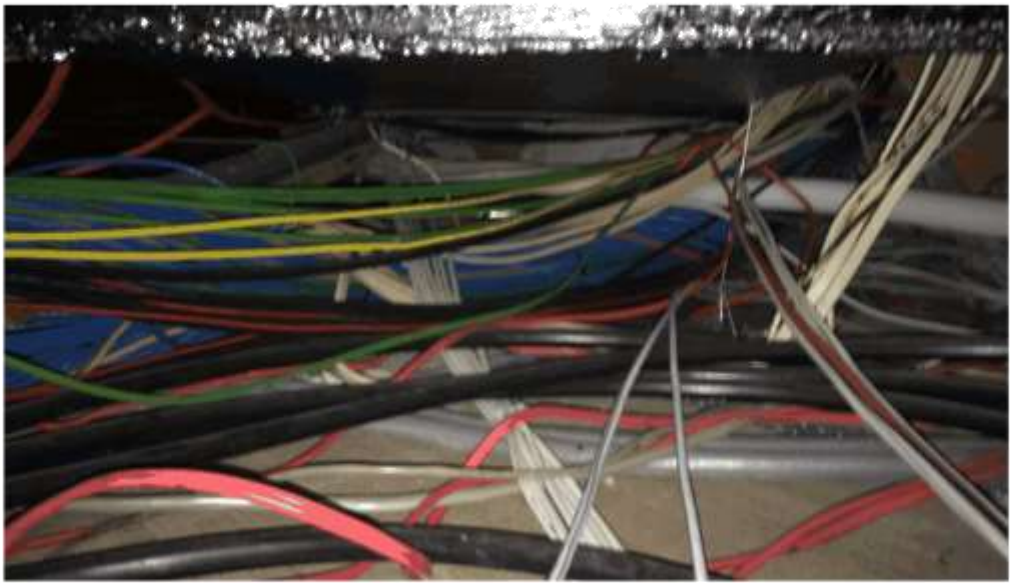
The remaining spaces use the AHU ducted system but still suffered from daily and season temperature fluctuations. This is mainly due to the selection of the fixed speed AHU. These are cheaper that the inverter type but have the disadvantage of start / stop control as opposed to a smoothly ramped control. This results in large variations in temperature in the building which staff is experiencing.

Ceiling Spaces:

The current ceiling spaces on the ground and top floor are quite congressed with ducting, data cables and power cables. Some of the air conditioning ducting and insulation is redundant and should be removed. The electrical wiring should also be assessed as some of the cables not used have power connected to them.

The insulation has been removed in mainly parts of the ceiling tiles.

Redundant ducting and loose wiring can cause a fire hazard.



A lot of the existing wiring has not been secure as per the regulations. Power wiring is mixed and tangled with data, fire and communications cable.

Ground Floor Outdoor Units

Many of the outdoor units have been installed in the vehicle lane at the rear of the building. The main issues are the ground level units could be damaged by vehicles using the lane. Other units have been installed at height to prevent damage from vehicle. This makes it hard for

maintenance and repairs EH&S process becomes very involved ie the lane has to be restricted, a platform may need to be used for access etc.

Solutions

Ceiling Space

To address the congestion in the ceiling space will involve the following

This will require

- Removal of office furniture in the space
- Ceiling grid to be removed and reinstated
- Removal of the ducting and redundant equipment.
- Fire system to be disconnected to prevent false triggers
- Electrical wiring to be assessed and redundant wiring removed. All existing wiring to be tidied and labeled.
- Fire sensors and wiring to be tidied.
- All fire dampers and fire wall assessed and reinstated to code.
- Office personnel to be relocated during this time (could be up to a month)

Once completed the insulation should be replaced and installed correctly on the tiles to provide the required level of insulation. This will reduce the energy losses in heating and cooling and reduce the electrical energy losses as the air conditioning equipment will be operating on a reduced capacity.

Air Conditioning

All outdoor units should be installed on Monkey Toe roof brackets removing the wooden mounts. This will help reduce the deterioration of the roof and reduce the possibilities of water leaks.

The tempered air system for the fresh air to the top floor needs to be completed. Energy is being lost in the winter as the air conditioning system is heating very low temperature air in the building space.

The front office air conditioning on the ground and top floor need to be assessed as office spaces need better temperature control.

The back office air handlers on the roof for the ground and top floor should be removed. The 2 – stage compressor control make it hard to have accurate temperature control throughout the building and leads to customer complaints. The option of an economizer on the fresh air intakes was not used so efficiency gains cannot be achieved. The spaces would be better served with smaller commercial ducted, cassette and hi-wall units. There are a number of Toshiba Commercial Units that have been installed which will reduce the amount of air conditioning plant required to complete the building.

To maximize energy efficiencies, all air conditioning, lighting and other services equipment could be controlled by a central BMS system. This allows for scheduling of equipment, saving energy by using the air outside, and turning off items after hours. Modern BMS allows access over the internet for control and fault recognition.

Lighting

A full assessment should be made to replace the old florescent lighting throughout the building with the new very efficient LED lighting. This can also be controlled by the BMS.

These solutions should be combined with building improvements to maximize the energy savings of the building.

Yours faithfully
AHI-Carrier (NZ) Ltd

Bruce Smith
Hawkes Bay Branch Manager.

Attachment 7 – Site assessment

Sites identified based on being in Council ownership and in the Taupo Town Centre Environment. The Taupo District Plan actively discourages office activity of a reasonable scale in zones other than the Taupo Town Centre Environment.

Site assessment

Map	Site	Advantages	Disadvantages
1	72 Lake Terrace (~4800m^2)	- Site is able to accommodate the required building footprint while still providing for car parks and green space - Reasonably central location - Prominent site - Currently provides for an EOC to be on site - All necessary services and infrastructure in place - Flat site (limited earthworks would be required)	
2	Tongariro North Domain (~20,000m^2 excluding the tennis courts)	- Large site able to accommodate a building and the required car parks - Greenfield development	- Community clearly articulated in 2010 that this was not a suitable location for a Council building - Challenging and costly to integrate a new building with existing buildings
3	Library site (~2000m^2) (South of the library)	- Site is able to accommodate the required building footprint while still providing for car parks and green space - Reasonably central location - Prominent site - Ability for an EOC to be on site - All necessary services and infrastructure in place - Flat site (limited earthworks would be required)	- Potential that the community feedback as noted above extends to this site. - Impact on parking at these venues, may require the development of further car parks - Potential challenges integrating a new building with the existing buildings. - Likely to require the relocation of infrastructure services including water and wastewater mains.
4	62 – 68 Heuheu Street car park (~3600m^2)	- Large site able to accommodate a building and the required car parks - Reasonably central location - Ability for an EOC to be on site - All necessary services and infrastructure in place	- Offer back required under the Public Works Act (potential time and financial constraint) – Section 40 and requirement to consult with five owners of this site could make this process complicated. - Impacts on Councils long term ability to manage the pool of all day car parking in the town centre

Map	Site	Advantages	Disadvantages
5	61- 75 Tuwharetoa Street/ 66 -72 Roberts Street car park (Farmers car park) (~4800m^2)	- Large site able to accommodate a building and the required car parks - Reasonably central location - Ability for an EOC to be on site - All necessary services and infrastructure in place	- Offer back required under the Public Works Act (potential time and financial constraint) - Impacts on Councils long term ability to manage the pool of all day car parking in the town centre
6	14 – 18 Taniwha Street car park (~2200m^2)	- Reasonably central location - Ability for an EOC to be on site - All necessary services and infrastructure in place	- Offer back required under the Public Works Act (potential time and financial constraint) – Section 40 complication - Impacts on Councils long term ability to manage the pool of all day car parking in the town centre - Questionable whether the site is large enough to accommodate the building and car parking
7	Gascoigne Reserve (28 Paora Hapi Street) (~2100m^2)	- Large site able to accommodate a building and the required car parks - Reasonably central location - Prominent site - Ability for an EOC to be on site - All necessary services and infrastructure in place	- Potential historic and cultural sensitivities regarding the Settlers cemetery

Site assessment considerations

- Ability of the site to accommodate the required development (including carparks, green space). Assumption that a new building would require a floor area of approximately 2,250m^2. This reflects allowing a formula of 15m^2 per person for 150 staff (124 from the current main Council building and 26 from the prefab).
- Flexibility for future changes.
- Location factors including the quality of the surrounding environment (including centrality, proximity to main roads, compatibility of activity with neighbours, strategic benefit of developing the site, suitability for an emergency management operations centre).
- Other physical elements of the site (prominence, contour, provision of services and necessary infrastructure, natural hazards, risk of subsidence).

Attachment 8 – Map 1 – Site assessment locations