Determination 2006/90

Refusal of a code compliance certificate for a building clad with vertical board and batten cladding at 61 Brooklands Road, Atawhai, Nelson

1. The dispute to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the Act") made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing, for and on behalf of the Chief Executive of that Department. The applicants are the owners Mr and Mrs Pinker ("the applicants") and the other party is the Nelson City Council ("the territorial authority").

1.2 The dispute for determination is whether the territorial authority's decision to decline to issue a code compliance certificate for a 10-year-old house because it was not satisfied that

[1] The Building Act 2004 is available from the Department's website at www.dbh.govt.nz.

1. The vertical boards and battens to the walls of the house complied with clauses B2 "Durability" and E2 "External Moisture" of the Building Code[2] (First Schedule, Building Regulations 1992), and;

2. Other elements of the building comply with clause B2,

1.3 The questions to be determined are:

Issue 1: The cladding

Whether I am satisfied on reasonable grounds that the board and batten cladding as installed to the walls of the building ("the cladding"), complies with the Building Code (see sections 177 and 188 of the Act). By "the board and batten cladding as installed" I mean the components of the system (such as the timber boards, the flashings and the joints) as well as the way the components have been installed and work together.

Issue 2: The additional durability considerations

Whether certain building elements, which have 5 or 15-year, or the life of the building, being not less than 50 years, durability requirements, comply with clause B2 of the building code considering the time that has elapsed since the elements were constructed.

1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Department to advise on this dispute ("the expert"), and the other evidence in this matter. With regard to issue 1, I have evaluated this information using a framework that I describe more fully in paragraph 6.1. I have not considered any other aspects of the Act or the Building Code.

1.5 Notwithstanding paragraph 1.4, in paragraphs 5.6 and 5.7 I draw attention to some matters that are outside the scope of the original dispute.

2. The building

2.1 The building work consists of a large detached house situated on a steeply sloping north-facing site, which is in a high wind zone for the purposes of NZS 3604[3].Most of the house is 2 storeys high, with varying levels designed to suit the slope and the height increasing to 3storeys at some northern areas. Construction is conventional light timber frame with some specifically engineered areas, and the house has concrete slabs and concrete block foundations and retaining walls to the lowest levels, and the garage, with timber-framed sub-floors elsewhere.

2.2 The house shape is complex in plan and form with aluminium windows, vertical board and batten cladding, and 45^{o} profiled metal gable and hipped skillion roofs, except for the flat membrane roof to the garage. The gables have curved ridges, with central "pop-up" clerestoreys over the main L-shaped gable. A 2 storey wing extends to the northwest at a 45^{o} angle from the main structure, and the single-storey garage

[2] The Building Code is available from the Department's website at www.dbh.govt.nz.
[3] [3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

wing extends to the southeast at a 45^{o} angle. Apart from the garage roof, eaves projections are generally more than 900mm (supported by diagonal struts from the walls), while verge projections are about 200mm. Diagonal struts also support pergola-style canopies above windows on the northwest corners.

2.3 Two timber-framed decks with timber slat floors and open timber balustrades extend to the north from the dining area and the master bedroom area below, with an additional small access deck at the lowest level. The roof of the garage forms an entry deck, with gravel and pavers laid over the roof membrane.

2.4 I have received no evidence of the treatment, if any, of the external wall framing of the house. However, given the date of construction in 1997, I consider that the external wall framing is unlikely to be treated.

2.5 The walls of the house are clad with macrocarpa timber vertical boards (approximately 200mm wide) and battens, fixed through the building wrap to the framing with a timber stain applied over the boards and the sealant joints in the boards. The boards and battens have weathergrooves of approximately 6mm x 6mm, and are fixed with stainless steel nails.

2.6 I have received no copies of producer statements or warranties for the cladding.

3. Sequence of events

3.1 The territorial authority issued a building consent (960757) on 7 August 1996, and undertook various inspections during construction. The territorial authority's inspection records are unclear as to the type of inspections undertaken. The inspection record notes "Consulting Engineer to inspect all specifically designed elements of the building", but I have received no evidence of these inspections.

3.2 Following a request for a code compliance certificate, the territorial authority wrote to the applicant on 17 January 2006 explaining that the age of the house presented a problem with regard to the durability provisions of the building code and noting:

> Due to the time that has elapsed since this work was undertaken, Nelson City Council cannot be satisfied on reasonable grounds that the work now meets all the requirements of the building code, especially B2 durability and E2 external moisture. Because of this Nelson City Council will not be in a position to issue a Code Compliance Certificate…

3.3 The territorial authority did not issue a notice to fix as required under section 164(2) of the Building Act 2004.

3.4 An application for a determination was received by the Department on 24 April 2006.

4. The submissions

4.1 The applicants made a submission in the form of a letter to the Department dated 18 April 2006, which explained that most of the construction had taken place in 1996 but the builder had not completed the contract. The applicants had subsequently completed the remaining exterior work and most of the interior work (in conjunction with trade subcontractors), believing that all necessary inspections by the territorial authority and the engineer had been completed. On deciding to sell the house the owner applied for a code compliance certificate. The applicant noted that the consulting engineer was checking his records with the aim of producing a Producer Statement Construction Review for the house, and concluded:

> I believe the house had been constructed to plan, using the best materials and work practices, and I am totally committed to carry out whatever work is required to reach a satisfactory outcome.

4.2 The applicant forwarded copies of:

- the plans
- a summary of inspections
- the letter dated 17 January 2006 from the territorial authority
- various other statements.

4.3 The territorial authority made no submission.

4.4 A copy of the applicant's submission was provided to the territorial authority, which made no submission in response.

Issue 1: The Cladding

5. The expert's report

5.1 The expert inspected the claddings of the building on 21 June 2006, and furnished a report that was completed on 23 June 2006. The expert noted that the building work was generally of a good standard and the roof cladding appeared to be in good condition, although relying on sealants which would need maintaining to preserve weathertightness. The expert also noted that the cladding had adequate base overlaps, the concrete block retaining walls appeared adequately waterproofed, plumbing work appeared satisfactory and penetrations were generally well sealed. The expert noted that ceiling insulation could not be inspected, as the skillion roofs were inaccessible.

5.2 The expert noted that the window installation was generally satisfactory, with metal head and sill flashings, and rebated battens overlapping the flanges at the jambs.

5.3 The expert took non-invasive moisture readings through linings of exterior walls throughout the house, and no elevated readings were noted. Two invasive moisture readings were taken through the wall cladding below the jambs of a north bedroom window, and into an exposed bottom plate, and no elevated readings were recorded.

5.4 The expert made the following specific comments on the cladding:

- the bottom of the cladding is buried in the ground at the northeast corner
- the bottom of the upper wall cladding butts against the apron roof flashings in many areas, with no drip edge provided
- the ends of the apron roof flashings lack kickouts
- the weathergrooves in the boards and battens are misaligned, resulting in poor cover to the boards in some areas
- there are some splits in the timber and some of the battens are warped, resulting in gaps against the boards
- there are unsealed gaps at vertical junctions with the concrete block walls, and some horizontal junctions lack adequate capillary gaps
- there is a corner batten missing at the projecting "box" from the kitchen
- there are unsealed gaps between the cladding and some window head and sill flashings
- there is no drainage gap between the deck slats and the cladding
- the triangular projecting window in the stair landing has no batten *(or scriber)* covering the window jamb flange, and the soffit beneath the projection is clad with unpainted fibre cement sheet
- there is a gap at the junction of the right hand end of the steel lintel with the concrete block garage wall
- a vent pipe penetration above the concrete block wall is unsealed
- the roof membrane on the entry deck over the garage is covered with gravel that is likely to damage the material when walked on
- the membrane on the entry deck over the garage is poorly finished at the perimeter, with gaps, untrimmed membrane and an edge delaminating at the drip edge to the gutter

5.5 The expert also noted that:

- the entry deck membrane runs into an adjacent service cupboard, with an inadequate step up to the bottom plate, which exposes the bottom plate to

moisture penetration. However, the area is sheltered under a generous roof overhang and the moisture in the bottom plate was measured at 18%

- although the base of the cladding lacks a 6mm capillary gap in some areas, the overlaps to the basement concrete block are generous (and gaps at provided between boards at batten positions)
- the electrical meter box lacks a head flashing, but the meter box is sealed into a "frame" of battens that overlap the junction
- although the stain on the cladding has weathered, the Macrocarpa timber does not need to be coated to achieve a 15 year minimum durability
- the cladding is fixed with nails beside the boards, which are bent over the edges of the boards.

5.6 The expert also made the following comments regarding items that do not relate specifically to cladding:

- the deck joists are nail-fixed to the ribbon plate without joist hangers
- joist hangers are lacking in the timber-framed subfloor area
- there is no floor insulation to the timber subfloor areas
- there is no fixed sub-floor ventilation
- there are no barriers to the entry deck over the garage and the lowest access deck
- The kitchen concrete block wall should be insulated.

5.7 On 7 July 2006 copies of the expert's report were provided to each of the parties. The applicants responded with a letter dated 12 July 2006 in which they said they wished to discuss the following items (identified by the clause numbers used in the expert's report):

8.21 The butyl-rubber roof over the garage.

8.27 Entranceway barriers.

8.29 Sub floor ventilation.

8.30 Insulating the kitchen concrete (block) wall.

6. Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution[4], in this case E2/AS1, which will assist in determining whether the features of this house are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

6.1.2 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations[5] (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

6.1.3 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

6.2 Weathertightness risk

6.2.1 In relation to these characteristics I find that this house:

- is built in a high wind zone
- is a maximum of three storeys high
- is complex in plan and form
- has eaves of about 900mm and verges of about 200mm above most walls

[4] An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way, but not the only way, of complying with the Building Code. The Acceptable Solutions are available from the Department's website at www.dbh.govt.nz.
[5] Copies of all determinations issued by the Department can be obtained from the Department's website.

- has vertical board and batten cladding fixed directly to the framing
- has external wall framing that is untreated, so providing no resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, all the elevations of this house demonstrate a high weathertightness risk. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

6.3 Weathertightness performance

6.3.1 Generally the cladding appears to have been installed in accordance with good trade practice. However, some junctions, penetrations and edges are not well constructed, and these areas are as described in paragraph 5.4 and in the expert's report as being the:

- inadequate cladding clearance above the ground at the northeast corner
- inadequate clearance and lack of drip edges at the roof to wall junctions
- lack of kickouts at the bottom of roof apron flashings
- misalignment of weathergrooves in some boards and battens
- splits in boards and warped battens in some areas, with gaps showing
- unsealed gaps at vertical junctions with concrete block walls
- missing corner batten at "box" projecting from kitchen wall
- unsealed gaps at window head and sill flashings in some locations
- lack of jamb battens and unpainted soffit to projecting window in stair landing
- lack of drainage gaps between deck slats and the wall cladding
- gap at the junction of the steel lintel with the concrete block garage wall
- unsealed vent pipe
- gravel over the garage roof endangering the underlying membrane
- gaps and untrimmed and delaminating membrane at the garage roof perimeter

6.3.2 I note the expert's comments in paragraph 5.5 and accept that these items are adequate in the circumstances applying to this house. I note that the board fixing, while not in accordance with current recommended practice, should provide adequate allowance for movement of the timber without damage to the timber.

6.3.3 I also note the expert's comments in paragraph 5.6 and draw these to the attention of the territorial authority.

6.3.4 Notwithstanding the fact that the board and batten cladding is fixed directly to the timber framing, thus limiting drainage and ventilation behind the cladding, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- Apart from the fixing positions, the cladding is generally installed to good trade practice
- The house has roof projections that provide good protection to most of the wall cladding areas below them
- There is no evidence of moisture penetration into the walls after 10 years.

7. Additional matters

7.1 In a telephone communication with an officer of the Department on 2 August 2006 the applicants reported that they had discussed with the territorial authority the items listed in their letter to me dated 12 July 2006. The outcome of the discussion was that:

- The applicants had agreed to protect the butyl rubber over the garage by using a sheet plastic material
- the question of barriers (balustrades) at the entrance and lower deck was not resolved and the parties agreed to await the outcome of the determination
- The applicants required clarification about the ventilation to the timber sub-floor areas
- The applicants will ask their architect to use the calculation method to determine the insulation required to the house.

7.2 My responses to the outstanding matters in paragraph 7.1 are:

- **Barriers to the entrance area and lower deck**: Building Code Clause F4 "Safety from Falling" requires safety barriers where people can fall more than 1 metre "from a sudden change of level within or associated with a building". This requirement applies to the lower deck and to the area adjacent to the entrance door. Safety barriers are required to both locations.

- **Sub-floor ventilation**: Section 10 of Acceptable solution E2/AS1 describes the minimum sub-floor ventilation required to comply with Building Code Clause E2 "External Moisture". Fixed ventilation to the sub-floor areas is required in order to comply with the Building Code.

- **Insulation to masonry wall in kitchen:** I note there is no calculation method included as a verification method for Code Clause H1 Energy Efficiency. The acceptable solution for Building Code Clause E3 'Internal Moisture' E3/AS1 requires a minimum R-value for masonry walls of 0.6.

8. Conclusion

8.1 I am satisfied that the current performance of the cladding is adequate because it is preventing water penetration into the building at present. Consequently, I am satisfied that the building complies with clause E2 of the Building Code.

8.2 In addition, the building is also required to comply with the durability requirements of clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the cladding faults on the building are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.

8.3 Subject to further investigations that may identify other faults, I consider that, because the faults that have been identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 should be expected to result in the building remaining weathertight and in compliance with clauses B2 and E2.

8.4 Remediation of those items listed in paragraph 7.2 should be discussed and agreed with the territorial authority, and if necessary, included in the Notice to Fix.

8.5 Effective maintenance of claddings is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owner. Clause B2.3.1 of thee Building Code requires that the cladding be subject to" normal maintenance", however that term is not defined in the Act.

8.6 I take the view that normal maintenance is that work generally recognised as necessary to achieve the expected durability for a given building element. With respect to the cladding, the extent and nature of the maintenance will depend on the material, or system, its geographical location and level of exposure. Following regular inspection, normal maintenance tasks should include but not be limited to:

- where applicable, following manufacturers' maintenance recommendations
- washing down surfaces, particularly those subject to wind-driven salt spray
- re-coating protective finishes

- replacing sealant, seals and gaskets in joints.

8.7 As the external wall framing of this building is likely to be untreated, periodic checking of its moisture content should also be carried out as part of normal maintenance.

9. The decision

9.1 In accordance with section 188 of the Act, I hereby determine that the cladding system as installed complies with clause E2 of the Building Code. However, there are a number of items to be remedied to ensure that the building remains weathertight and thus meets the durability requirements of the code. Consequently, I find that the house does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.

9.2 I also find that rectification of the items outlined in paragraph 6.3.1 will consequently result in the house remaining weathertight and in compliance with clauses B2 and E2. Work to correct these items may expose additional associated defects that are not yet apparent. All rectification work is to be completed to the approval of the territorial authority.

9.3 I note that the territorial authority has not issued a notice to fix. A notice to fix should be issued requiring the owners to bring the house into compliance with the Building Code. The notice should include those items mentioned in paragraph 7. The notice to fix may list the items to be rectified but it should not specify how compliance is to be achieved as that is for the owner to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

9.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.3. Initially, the territorial authority should issue a notice to fix, listing all the items that the territorial authority considers to be non-compliant. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

Issue 2: The additional durability considerations

10. Discussion

10.1 As previously described, the territorial authority has concerns about the compliance with clause B2 of certain elements of the building. These building elements included all items other than those relating to the cladding. These elements have 5 or 15 year, or the life of the building, being not less than 50 years, durability requirements under clause B2.

10.2 The territorial authority's concerns are due to the fact that the building was substantially completed in 1997, some years before the territorial authority refused to issue a code compliance schedule on 17 January 2006.

10.3 The relevant provision of clause B2 of the Building Code recognises that building elements must, with only normal maintenance, continue to satisfy the performance requirements of the Building Code for certain periods "from the time of issue of the applicable code compliance certificate" (clause B2.3.1 and 'limits on application' marginal note).

10.4 Under clause B2.3.1, the periods for which building work must remain durable are:

- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building;
- 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance; and
- the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.

10.5 From the evidence provided by the territorial authority about the building, I am satisfied that:

- the building elements concerned would have met the required durability provisions of clause B2 at the time of substantial completion of the building (i.e. when the building was ready for occupation in 1995); and
- the territorial authority has correctly established compliance with all other Building Code clauses.).

10.6 On this basis, the territorial authority (under sections 45(5) and 67 of the Building Act 2004) should amend the building consent to incorporate a modification to clause B2. The modification should be to the 'limits on application' marginal note to clause B2.3.1, to the effect that the required durability periods for the building elements concerned apply from the date of substantial completion of the building, not from the date of issue of the code compliance certificate. For the purposes of this determination, "substantial completion" of the house is achieved when the house was completed and ready for occupation as determined by the territorial authority.

10.7 The modification of clause B2 should be documented in the territorial authority's records of the property to ensure that potential purchasers and subsequent owners are aware of the modification. It would be appropriate for the territorial authority to note the modification on the Land Information Memorandum, and to place a copy of the determinations on the property file for the building.

10.8 In coming to this view, I have had to consider section 436 of the Building Act 2004. Section 436 sets out the transitional provision for issuing code compliance certificates for building work consented under the Building Act 1991. This section is relevant to the territorial authority's decision not to issue a code compliance certificate for the building in this determination.

10.9 The relevant parts of section 436 state:

> (2) An application for a code compliance certificate in respect of building work to which this section applies must be considered and determined as if this Act had not been passed.
>
> (3) For the purposes of subsection (2), section 43 of the former Act—
>
> (a) remains in force as if this Act had not been passed; but
>
> (b) must be read as if—
>
> (i) a code compliance certificate may be issued only if the territorial authority is satisfied that the building work concerned complies with the building code that applied at the time the building consent was granted; and
>
> (ii) section 43(4) were omitted.

10.10 Section 43 of the 1991 Act provided for the issue of code compliance certificates. Under section 43(3)(a), a territorial authority could issue a code compliance certificate if it were satisfied that the building work complied with the Building Code in force at the time the application for a code compliance certificate was made. Under section 43(3)(b), the territorial authority could consider compliance against any waiver or modification to the Building Code in determining whether to issue a code compliance certificate.

10.11 There are two possible interpretations of section 436:

- a code compliance certificate may be issued only if the territorial authority considers the building work complies with the Building Code in force at the time the building consent was granted; or
- a code compliance certificate may be issued if the territorial authority considers the building work complies with the Building Code in force at the time the building consent was granted, but allowing for any waivers and modifications to the Building Code incorporated in the building consent.

10.12 The first interpretation is premised on section 436(3)(b)(i) replacing section 43(3) of the 1991 Act. It relies on the use of the word "only" in section 436(3)(b)(i) as excluding the possibility of the territorial authority considering anything other than compliance against the Building Code in force at the time the building consent was granted, meaning that a territorial authority would not be able to consider any waivers or modifications to the Building Code that were incorporated in the building consent.

10.13 In comparison, the second interpretation is that section 436(3)(b)(i) does not replace section 43 of the 1991 Act, but that it must be read alongside section 43(3) as much as possible. Under this interpretation, section 436(3)(b)(i) should be read as modifying section 43(3) only in respect of the new element it adds to the code compliance certificate test; it merely changes the version of the Building Code that compliance should be measured against, from the version in force at the time the application for a code compliance certificate was made, to the version in force at the time the building consent was granted.

10.14 The effect of the first interpretation would be that owners who have been granted waivers or modifications to the Building Code (whether under the 1991 Act or through an amendment to a consent under the 2004 Act) would never be able to obtain a code compliance certificate. Essentially, these owners, who may have relied in good faith on waivers or modifications legitimately granted to them, would be left in perpetual limbo.

10.15 This would be most undesirable. It would be the reverse of the usual situation under both the 1991 and 2004 Acts and, in my view, does not fit with the purpose and scheme of the Building Act 2004. As far as possible, an owner should obtain a code compliance certificate for all work requiring a building consent and for which a consent was approved. A grant of a waiver or modification should not stop this.

10.16 Furthermore, there is nothing in the transitional provisions of the 2004 Act that supports such a result; for cases where waivers or modifications have been granted, the Act does not provide for any outcome other than to obtain a code compliance certificate. In comparison, section 437(1)(b) provides for an owner to obtain a certificate of acceptance if they are unable to obtain a code compliance certificate because the building certifier no longer exists.

10.17 For the reasons set out above, I prefer the second interpretation relating to section 436(3)(b)(i).

11 The decision

11.1 Despite the evidence referred to in paragraph 10.5, I have not received sufficient subsequent evidence that the building elements meet the current requirements of clause B2 at the present time. Therefore, I find I am unable to be satisfied on reasonable grounds, due to the absence of evidence, that the particular building elements, which have 5 or 15 year, or the life of the building, being not less than 50 years, durability requirements, comply with clause B2 of the Building Code. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate for the building.

11.2 In my opinion, the owner should apply to the territorial authority for a waiver or a modification to the original building consent as set out in paragraph 10.6, which should address the B2 issues raised by the territorial authority.

11.3 In my opinion, a territorial authority shall, on receiving such a request from the owner, consider any waivers or modifications it has granted when deciding whether to issue a code compliance certificate for building work consented under the 1991 Act. Under section 436, a territorial authority should measure compliance against the Building Code, as amended by any waivers or modifications, which was in force at the time the building consent was granted.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 18 September 2006.

John Gardiner
Determinations Manager