# Bergman & Associates, Inc.

Engineers

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Farrwood Green II Condominium Associationc/o Ms Elaine Romano Box 488 North Andover, MA 01810

Reference: Roof Inspections - Buildings A, B and C

Dear Ms Romano:

10 December 08

### Introduction

In response to your request, we have inspected the referenced roofs and submit this report. It is our understanding that the integrity of some or all of the roofs was in question, and hence the decision for the inspection.

The three buildings have hip roofs, approximately 5/12 pitch, with a flatter section of roof over the building entrance. All of the roofs have valleys separating the different roof planes.

Our work was limited to visual inspection of the asphalt shingles. On the day of our inspection, we did not have access to the attic spaces beneath the roofs.

# Inspections

## Building A - Units 49 - 64

The south-facing flat roof is in very poor condition. (See photo 1) Pieces of three (3) shingles are missing, and there are exposed roofing nails. (See photo 2)

The valleys are very heavily degraded. (See typical photos 3 and 4)

We observed that the roof has "waves", or lifted sections of the roof sheathing. (See typical photo 5) These areas appear to coincide with the unit demising walls below. While these waves may not affect the performance of the shingles, we recommend that this phenomenon be investigated during the reroofing. Normal roof planes should not have these discontinuities.

We also observed a strange linear crack in the shingles, parallel to the eave, on one of the pitched roofs. This may coincide with plywood joints below, but can only be ascertained during reroofing. Although we do not believe the crack will cause leaking into the building, it should be investigated.

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# Building B - Units 65 - 80

In general, this roof was in fair condition. We observed that, for some reason, only the southeast roof has a ridge vent. The flat section of roof is worn. Undulations in the roof, noted in Building A, were observed in this building also.

The valleys are somewhat degraded.

# Building C - Units 81 - 96

Undulations in the roof, similar to Buildings A and B, were noted in this building also. Additionally, we noticed several soft spots while walking on the roof. Both of these issues will need to be investigated during the reroofing work.

In general, the roof is degraded. Although we took care while walking on all the roofs, we noticed that small pieces of shingles were breaking off when we walked over them.

On this particular roof, we noticed an odd diagonal ridge/undulation in the roof plane. (See photo 6)

#### Recommendations

Generally speaking, the roofs are in fair to poor condition. All three (3) flat roofs were in poor condition. From visual inspection of the roof planes, there are indications that there may be some underlying sheathing or framing issues. These concerns can be investigated further when new roofs are installed. Any deficiencies can be addressed at that time.

All of the valleys had signs of degradation, some significant. We suspect that insufficient ventilation may be the cause of this deterioration. This may also be the case for the flat roof failures.

It is impossible to certify that any given roof will never leak over a period of time. At this time, however, we recommend that all the valleys be swept clean and coated with a thick layer of roofing cement. This should prevent leaks in these areas through the winter period. In 2009, we

Page 3 - Report to Farrwood Green II Condominium Association, c/o Ms Elaine Romano would recommend that the Association undertake reroofing of all three buildings.

Sincerely yours,

Paul A Bergman, PE

President

Attached photos



**PHOTO 1** 



**PHOTO 2** 



**PHOTO 3** 



**PHOTO 4** 



**PHOTO 5** 



PHOTO 6