

SALLY BEAMISH BIOGRAPHICAL NOTE

- Sally Beamish was born in London in 1956 and now lives in Scotland. She started composing music when she was four years old which her mother, who was a violinist, would play for her.
- She studied at the Royal Northern College of Music, Manchester, and spent ten years as a professional viola player during which time she played with the Raphael Ensemble, the Academy of St Martin-in-the-Fields and was principal viola with the London Mozart Players. The years spent playing were very important when she eventually became a full-time composer: "The single most valuable thing was learning how it feels to play someone else's music."
- She switched from playing to composing around 1990 after having her first child: "Playing the viola all the time I was miserable at not seeing the children enough, so the only thing to do was to compose." The move to composing was hastened when her viola was stolen and when she and her family moved to Scotland.
- She quickly established her name in the early 1990s with the help of an Arts Council Composers' Bursary and by 1992 was receiving the equivalent of one performance a week and nine commissions in just one year.
- In 1999, Sally Beamish became Composer-in-Residence with the Swedish Chamber Orchestra and this led to a contract with the Norwegian publishers, Norsk Musikforlag (who publish *Opus California*) as well as a relationship with the Swedish-based BIS record label. In 2002, her opera, *Monster* was premiered by Scottish Opera. It is based on the life of the writer Mary Shelley who wrote the original novel *Frankenstein*.

- As a busy professional composer with a family, Beamish's working habits are disciplined and organised. For many years she works in a potting shed at the bottom of the garden at her home in Sterlingshire, inspired by the rolling Scottish landscape before moving to Glasgow in 2014.

SALLY BEAMISH AND MUSIC IN SCOTLAND

Scottish music began to gain an international reputation in the 1950s with composers such as Iain Hamilton (1922-2000), Thomas Wilson (1927-2001), Thea Musgrave (b.1928) and Ronald Stevenson (1928-2015). However, Scotland already had a history of professional classical composition stretching back many centuries, including the great Renaissance composer Robert Carver (1485-1570). They emerged at a time when classical music in Scotland was undergoing an explosion of growth with the formation of the Edinburgh Festival, Scottish Opera, the Scottish Chamber Orchestra and St Magnus Festival along with the development of its other orchestras and ensembles.

Like Sir Peter Maxwell Davies, who moved to the Orkneys in the mid-1970s, Sally Beamish has embraced and been influenced by Scottish culture and the richness of its folk music. Like many composers who emerged in the 1990s, she draws his ideas and influences from a wide variety of music. His most immediate contemporaries include Judith Weir (1954), James MacMillan (1959) and Gordon McPherson (1965).

OPUS CALIFORNIA BACKGROUND NOTES

- Opus California was commissioned by the Brodsky Quartet and first performed by them on 8 March 2000 at Cabot Hall, Canary Wharf, London. It is Sally Beamish's Second String Quartet.
- The work is in four movements, of which Boardwalk and Natural Bridges form the first and last movements.
- The composer has also made a version of this quartet for saxophone quartet.

CONCEPT

- The four movements of Sally Beamish's *Opus California* are based on four short extracts from the first movement exposition of Beethoven's String Quartet in C minor, Op.18, No.4 (one extract per movement).
- The quartet was the first work the composer ever experienced as a viola player in a string quartet at the age of fifteen: "The rich, dark harmonies fascinated me, and it was the beginning of my realisations of what it means to play a stringed instrument – the world of chamber music opened up for me at that moment".
- The relationship with the Beethoven work came about as a response to a commission from the Brodsky Quartet who were assembling a set of pieces inspired by Beethoven's Op.18 Quartets. The link with California, USA, came about because the composer had recently visited the Cabrillo Festival in Santa Cruz, California and there heard a lot of American music. "I liked the directness and honesty of the musical language, and the immediate, warm response of Californian audiences. This quartet represents an "opening-up" of my own language, while offering a light-hearted angle both on the Beethoven and on the American experience".

- The idea is taking another composer's music as a starting point is not a new one; for centuries, composers have written sets of variations of other's themes. But the idea of transforming passages or fragments of another composer's music as happens here is a more recent practice, particularly used by Stravinsky. Other examples include composers such as Peter Maxwell Davies, Gavin Bryars or Michael Finnissy.
- In this instance, the original fragments of Beethoven are still recognisable to anyone who hears the two pieces side by side, but in Sally Beamish's hands the raw harmonies are transformed into a completely different emotional world: in the case of *Boardwalk*, the potentially tragic overtones of Beethoven now feel "cool" and "streetwise" with rhythmic syncopations that suggest jazz or even popular music.

QUESTIONS:

- * How many extracts does the composer use in total for the whole work and from which part of the Beethoven Quartet are they taken?
- * The first movement of the Beethoven Quartet is in sonata form. What is sonata form and where does the exposition come in the form as a whole?
- * What is the relationship between the Beethoven Quartet and California?

MOVEMENT 1:

BOARDWALK: STRUCTURE

The different sections of *Boardwalk* may be shown as follows:

1 - 29	SECTION A
30 - 47	SECTION B (DEVELOPMENT)
47 - 68	REPRISE OF SECTION A

DETAILED RESUME OF STRUCTURE

Section A (Bars 1 - 29)

1 - 7	This section is a transformation of bars 1-2 of the first movement of Beethoven's C minor Quartet, Op.18, No.4 (See Example 1a), initially stretched out over 7 bars. Key: C minor.
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Ex 1a: Bars 1-2 of Beethoven Quartet Op.18, No.4, Opening of 1st movement

Allegro ma non tanto. ♩ = 84

The musical score is for the opening of the first movement of Beethoven's Quartet Op.18, No.4. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is B-flat major (two flats) and the time signature is common time (C). The tempo is marked 'Allegro ma non tanto' with a quarter note equal to 84 beats per minute. The score shows bars 1 and 2. In bar 1, Violin I plays a half note G4 (p), Violin II and Viola play whole rests, and Violoncello plays a half note G2 (p). In bar 2, Violin I plays a half note A4 (sf), Violin II plays a half note G4 (p), Viola plays a half note G3 (p), and Violoncello plays a half note G2 (sf). The dynamics are p (piano) and sf (sforzando).

Section A (Bars 1 - 29)

1 - 7

There are two main elements here: a sequence of four chords (see below) and a leaping melodic line interspersed between them moving between the three lower instruments.

The four chords (element 1) appear in exactly the same voicing as found in the Beethoven quartet over a pedal note of C (see Example 1b):

Ex 1b: Harmonic reduction of bars 1-2 of Beethoven Quartet Op.18, No.4, Opening of 1st movement

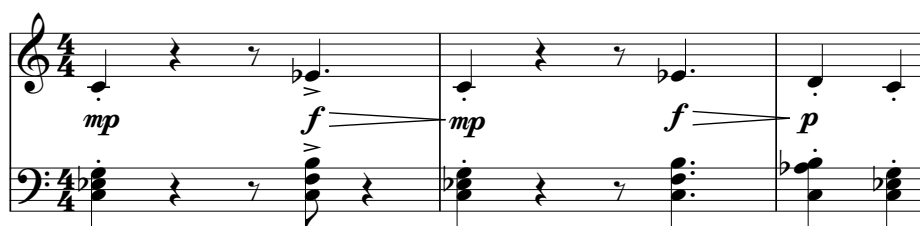
Allegro ma non tanto ♩ = 84

1 - 7

These consist of a chord of C minor, a dominant 7th in 4/2 position (but with no G) with an unresolved appoggiatura on the flattened 6th (E flat implying a fall to D), a diminished chord and a return to the tonic (see Example 1c)

Ex 1c: Harmonic reduction of bars 1-3 of Beamish *Boardwalk*, Opening of 1st movement

Allegro (♩ = c. 120)



The melodic line (starting at bar 3) is entirely derived from the final note of the decorative turn and final three notes of the first violin part in bar 1, subjected to octave displacement (see definition) (B-C-E flat-D) (see Example 2)

Ex 2: Derivation of melodic line in Beamish bar 5 from melodic line in Beethoven bar 1



Beethoven bars 1-2



Beamish bar 5

1 - 7

- Bars 1-3 outline the four chords described above.
- Bar 2 is a repeat of 1.
- Bar 3 cadences back to the tonic using the 3rd and 4th chords.
- Bars 4-6 repeat the final two chords twice on different beats of the bar.

In bars 4-7 the chords recede in importance and the melodic element grows, from 3 notes (bar 3), to four (bar 5) and finally a flourish of 12 (bars 6-7). This is built from fragments of, and adjustments to, the violin part of Beethoven's first violin part in bar 1 (see Example 3).

Ex 3: Extended melodic line in Beamish bars 6-7 from melodic line in Beethoven bar 1

Beamish bars 6-7

Section A (Bars 1 - 29)

8 – 15

The interest here is entirely harmonic and the melodic aspect temporarily ceases.

Bars 8-15 are built from bars 3 and 4 of the Beethoven. The passage starts on F minor and the key is confirmed as the tonic by the time we reach the cadence on the first beat of bar 16.

The four chords appear in exactly the same voicing as found in the original Beethoven quartet (see Example 4a and b)

Ex 4a: Bars 3-4 of Beethoven Quartet Op.18, No.4, Opening of 1st movement

The musical score for Ex 4a shows the opening of the first movement of Beethoven's Quartet Op. 18, No. 4. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is F minor (three flats) and the time signature is 4/4. The score is divided into two measures, corresponding to bars 3 and 4. In the first measure, all instruments play piano (*p*). In the second measure, all instruments play sforzando (*sf*). The Violin I and Violoncello parts have a rhythmic pattern of eighth notes, while the Violin II and Viola parts have a melodic line. The Viola part is written in alto clef.

Ex 4b: Harmonic reduction of bars 3-4 of Beethoven Quartet Op.18, No.4,
Opening of 1st movement



8 – 15

over a pedal note of C: a 6/4 chord of F minor, a dominant 7th in root position (on F minor) with an unresolved appoggiatura on the flattened 6th (A flat) and a diminished chord returning to the chord of F minor (see Example 4c).

Ex 4c: Harmonic reduction of bars 8-10 of Beamish *Boardwalk*,
Opening of 1st movement

Allegro (♩ = c.120)



8 – 15

Bars 8-15 are based on the prolongation of the first three chords, only resolving to the F minor tonic (beats 3 & 4 of Beethoven's bar 4) on the first beat of bar 16. As before the whole passage (except bar 11) is built over a pedal note of C in the bass (as in the Beethoven). In the course of this passage it becomes a dominant, rather than tonic pedal as F minor is established.

Bars 8-12 outline the three chords described above. Bar 9 is a repeat of 8; bars 10-11 delay the return to the tonic using the 2nd and 3rd chords (or variants of them). Bar 12 returns to the tonic of F, but with the addition of a D flat, which comes to dominate the bars that follow.

Bars 13-15 extend the return to the tonic at bar 16 with a series of harmonic progressions around the chord of D flat (flat vi in F minor). The derivation of D flat is hinted at in the viola part of the Beethoven quartet at bar 4 (see Example 5).

Ex 5: Bar 4 of Beethoven Quartet showing derivation of the note D flat



Section A (Bars 1 - 29)

16 – 22

This passage is a varied repeat and elaboration of bars 1 – 7, now in F minor.

The harmony here is similar to bars 1-7, but coloured by the D flat relationship of the previous passage: a dominant 7th in 4/2 position with an A flat appoggiatura, falling to a dominant chord, but coloured by the addition of a D flat.

The melodic element consists of several 3-note cells derived from the earlier material (bars 18, 20-22), expanding to a longer passage at the close. On the final two beats of bar 22 a short 4-note figure is introduced (violin 1) that will assume more significance later.

23 – 29

These bars return to C minor to round off the first section.

The two chords that opened the work (bars 1 & 2) are heard in double stops on the viola and cello (bars 24-5 & 28-9), interspersed with variants of the melodic figure (bars 24 & 26-7). The passage closes on a unison C.

QUESTIONS:

- * What are the two different types of material found in the first section of *Boardwalk*?
- * How are four chords that make up the first two bars of the Beethoven Quartet stretched out across the opening 7 bars of *Boardwalk*?
- * What is an appoggiatura and where can it be found in the opening 7 bars of the quartet?
- * What relationship do the melodic lines in bars 1-7 have with the Beethoven Quartet?
- * Of the two types of material identified above, which is missing from bars 13-16?
- * At which bars point does the harmony make a complete break with the four Beethoven chords?
- * In bars 24-25, the opening material comes back in double-stops on the viola and cello? What are double stops?
- * What rhythms found in this section can be related to jazz?
- * There are two main tonal centres in this section. What are they?
- * How does the use of D flat, both in bars 13-16 and later, relate to the Beethoven Quartet?

Section B (Bars 30 - 46)

In the terms of the Classical period, this section could be seen as a brief development, insofar as it is very unstable in harmonic terms with no one key is ever established. All the harmony is made up of altered seventh chords of differing varieties that are never resolved or settle in one key (see Example 6 – harmonic reduction).

Ex 6: Harmonic reduction of bars 30-33 of Beamish *Boardwalk*



With the exception of the C minor melody in the first violin (bars 32-36); the emphasis is entirely on harmony.

30 - 36

This is a series of unresolved seventh chords presented as a repeated chord ostinato with some rhythmic syncopation in bars 33, 35 and 36. A melodic line is heard in the first violin (bars 32-36), based on the melodic figure first heard in bars 5-7. The melody is in C minor and the harmony (through to bar 33) is related to the same key.

Section B (Bars 30 - 46)

37 - 44

This is a varied repeat in rhythmic and harmonic terms of bars 30-36, opening around F minor in the upper strings, but contradicted in the bass around C#. The passage from bar 41-44 passes through several suggested keys, coming to rest on an 11th chord on D as a dominant preparation for the next section.

QUESTIONS:

- * What section in a sonata form movement might this section relate to and for what reason?
- * Which of the two different types of material found in the Section A form the main focus in this section?
- * Despite the melodic line in the violin (bars 32-36) being in C minor, does any one key predominate in the harmony in this section?
- * What kinds of chord can be found in the harmony of this section and how might they be roughly defined?
- * At the end of the section, a dominant preparation is made for the return of Section A at bar 46. What key does the dominant prepare?

Section C (Bars 46 - 68)

This is in the nature of a recapitulation of the music of bars 1-29 beginning initially in G minor (the dominant) but returning to the home key at the close.

46 - 53

This passage is a recapitulation of bars 1-7, though with several differences

- The key is now G minor and the section starts on an anacrusis (the section starts with the original upbeat to the second bar, omitting the tonic chords that opened bar 1).
- In bars 47-8, a D flat ($\#iv$) is heard in opposition to the home key in the cello. This introduces the tritone (G – D flat) that eventually comes to dominate the final movement.
- The melodic figures at bars 49, 51-53 have been re shaped and a new figure added at 50-1 in the viola rising mainly in 3rds.

54 – 58

This passage is a recapitulation of bars 8-11 with a new bar of transition at 58. The key now returns to C minor with a rising cello solo heard throughout loosely based on the original melodic material of bars 3-7.

Section C (Bars 46 - 68)**59 – 68**

Bars 59-61 are a recapitulation of 13-15 over a dominant pedal (as before) in the cello, this time in quavers. The passage is then repeated an octave higher at 62-64.

A short rising cello solo of two bars (65-66) expands on the tritone relationship, outlining F# to C# and other related pitches. It moves to a final cadence using the two chords with which the movement began, ending in C minor.

QUESTIONS:

- * In terms of sonata form, how might this section be described?
- * What key does the section begin in and what is its relationship to the key of the same material in the corresponding section earlier in the movement (bars 1-7).
- * In terms of Classical sonata form, what is unusual about beginning this section in this key?
- * What pitch is heard in opposition to this key, and where has it appeared before in the movement?

TONALITY

Although much of the harmonic movement in the first movement of *Opus California* stays very close to the opening section of movement 1 of Beethoven's C minor Quartet, its use of tonality and key centres is quite different. The harmony often suggests certain keys, but there is no traditional sense of modulation between them once the initial section is left: instead there is usually a sudden shift between keys at the beginning of a new section or, no settled sense of key at all, even if the different chords being used usually have a function in terms of traditional harmony (for instance, see the section at bars 30-46).

The key centres might be shown thus:

Section A1	Section A2	Section B	Section A (Recapitulation)	Section A (Coda)
Bars 1-15	Bars 16-29	Bars 30-46	Bars 46-65	Bars 65-68
C minor	F minor	Initially C minor but then unstable	G minor	C minor

QUESTIONS:

- * How does the composer move between different keys in *Boardwalk*?
- * How does the composer preserve the same relationship between the two keys in the recapitulation (bars 46-68) as in the opening section, yet still return to the tonic of C minor at the close?

TEXTURE AND SONORITY

Much of the first movement of *Opus California* uses the string quartet as Beethoven might have found it, only occasionally using playing techniques used that have emerged since his time. The movement is almost entirely made up of two different elements: harmonic and melodic, often separated from one another (for instance, see bars 1-7 where the harmonic sections are quite distinct from the melodic ones).

- The melodic sections, at least initially, are often made up of smaller fragments of notes, passed between the instruments, only occasionally blossoming into fully-formed longer melodies (see bars 32-36 in violin 1 or bars 53-56 in the cello). These fragments are also strongly characterised by large expressive upward leaps, often using 7ths.
- Much use of made of rests throughout the movement, to emphasise the sense of tension. This is a device that is introduced straightaway in bars 1-7.
- Only one playing technique can be found in this movement that was not used in Beethoven's time: portamenti on pizzicato notes, particularly on the cello and viola (see bars 26 or 28).

QUESTIONS:

- * What technique can be found in the writing for strings in *Boardwalk* that is not found in Beethoven?
- * What features characterise the melodic sections in *Boardwalk*?
- * What device is used frequently to emphasise the sense of tension?

HARMONIC LANGUAGE

This section describes the use of harmony in *Boardwalk* section by section.

- In the opening 10 bars, all the harmony is directly taken from the Beethoven quartet and is shown (more or less) in its original voicing.
- In the Beethoven, the same material lasts for 4 bars, but in *Boardwalk*, it is stretched out over 10 bars, with varied repeats of harmonic progressions.
- The harmony begins to change from that found in Beethoven from bar 11-12 where notes are changed or added to Beethoven's original harmony. At bars 13-15 a new series of progressions are added with a chord of D flat as the main focus (see the viola part of bar 4 of the Beethoven Quartet where D flat is introduced).
- The subsequent harmony from bars 16-29 return to that found in Beethoven with some D flat colouring. Its use is similar to that in bars 1-7 with progressions repeated and stretched out, heard next to melodic fragments.

- The harmony used in the section from bars 30-46 represent a new departure and no longer relate so directly to Beethoven. They do, however, take the second chord of bar 1 (and the 4th beat of bar 1 of the Beethoven) as a starting point or ‘anchor’ chord (see bar 30) for a series of other types of altered 7th. This represents a move outside of the world of Beethoven’s language in that the subsequent dissonances are unprepared and are not directly functional. They are closer to the way in which composers have used harmony in a post-Debussyian world.
- The return to the harmony of the opening section comes on the anacrusis of bar 46, this time in G minor and this neatly moves back to the home key of C minor at the close, whilst still preserving the relationship in the initial section (C minor to F minor). There are no further issues from this point that have not been covered above.
- The use of pedal points throughout the movement is very extensive.

QUESTIONS:

- * How does the harmony in bars 11-12 differ from what has gone before?
- * Which of the chords found in Beethoven form a starting point for the harmony in the central Section B?
- * What is “functional” harmony and does it play a part in *Boardwalk*?

TEMPO, METRE & RHYTHM

TEMPO

The tempo for *Boardwalk* is *crochet* = c.120, which is slower than Beethoven's original marking of *minim* = 84.

METRE

The whole movement is in 4/4 and makes much of the various syncopations that can be felt within this metre. For instance, note:

- » the accented dotted *crochet* upbeat heard in bar 1 and many other times subsequently. This has been derived from various forms of jazz and dance music that often divide the bar unequally into 3+3+2 or, in this instance, an implied 2+3+3;
- » the manner in which the two chords first heard at bar 3 (on beats 1 & 2) are moved to the 2nd & 3rd beats of the (bar 4) and then separated in bars 5 & 6;
- » the use of the unequal division of beats (discussed above) in bars 10-12 (3+2+3);
- » the use of unequal beats across the barline in 13-14: 3+2+2+2+3+2+2;
- » the way in which the first beat of the melodic figure in bars 6-7 sometimes fall on the beat and sometimes off the beat;
- » one of the most complex passages is between bars 32-36 where a series of upbeats in the first violin melody are continually placed on different beats of the bar against a syncopated passage in the lower strings.

BAR / PHRASE STRUCTURE

Although the phrase structure in the Beethoven quartet falls largely into 4 and 8 bars sections, this is less obvious in *Boardwalk* because of the syncopations and the stretching out of the harmonic structure. In addition, traditional phrase length is an aspect of music that composers have tended to blur throughout much of the last century and in more recent times.

- In the opening section (bars 1-29), the phrase lengths tend to fall as follows: 7+5+3 bars (dovetailing to) 6+3+2+2.
- In Section B (bars 30-46), there is a similar use of phrase lengths. There is an initial 7 bar period in the lower strings with an almost independent 4 ½ length melod given out by the first violin (bars 32-36). Another 7 bar period follows (37-43) and the section concludes with a 2 ½ bar phrase.
- The return of Section A (bars 46-68) proceeds in a similar manner: 7 ¼ +5+3+3+4.

QUESTIONS:

- * What rhythmic device, which interrupts the regular flow of the rhythm, is used extensively in *Boardwalk*?
- * What three ways might a 4/4 bar be divided unequally using groups of 2 and 3 quavers?
- * Identify a passage where unequal beats are used across a barline by tying a note.
- * How are Beethoven's chords stretched out in an irregular fashion in bars 1-7?
- * In Beethoven's Quartet, phrases tend to fall into quite regular groups of bars (2+2 or 4+4). Is this also the case in *Boardwalk*? Please give some examples of the type of phrase structure that might be found here.

DYNAMICS

The dynamic level of *Boardwalk* is sections starting relatively quietly and increasing in tension.

MOVEMENT 4:

BOARDWALK: STRUCTURE

The different sections of *Natural Bridges* may be shown as follows:

1-16	Section 1a
16-24	Section 2a
25-32	Section 1b
32-42	Section 2b
43-50	Cadenza
50-59	Development
60-74	Section 1c
74-80	Section 2c
81-93	Coda

CONCEPT

The dynamic level of *Boardwalk* is sections starting relatively quietly and increasing in tension.

- Like *Boardwalk*, *Natural Bridges* is also built from material taken from the first movement exposition of Beethoven's String Quartet in C minor, Op.18, No.4. In this movement it is taken, the composer tells us, from "the second bridge passage coda" (approximately bars 70-77 – See Example 7).

Ex 7: Bars 70-77 of Beethoven Quartet Op.18, No.4, 1st movement

The musical score for Example 7 consists of two systems of four staves each, representing Violin I, Violin II, Viola, and Violoncello. The key signature is C minor (three flats) and the time signature is 4/4. The first system shows the initial part of the excerpt, starting with a piano (*pp*) dynamic. The second system shows the continuation, where the dynamics increase to forte (*f*) for all instruments. The score illustrates the tension-building through dynamic contrast.

- The movement is named after *Natural Bridges*, a “popular beach with spectacular rock formations”. Natural Bridges State Beach is a 65-acre California state park in Santa Cruz, California which features a natural bridge across a section of the beach. It is also a well known location to see monarch butterfly migrations.
- Unlike Boardwalk, the derivation of the material from Beethoven is less obvious in this movement, much of it being derived from intervals in a brief 8 bar section found at bars 70-77. The section only comes to the forefront of the music once, in a ghostly quotation towards the end of the movement (bars 65-71 & 84-89).

QUESTIONS:

- * What is the difference in the use of Beethoven’s material in *Natural Bridges* compared to *Boardwalk*?
- * Is the Beethoven material that the composer has drawn on melodic or harmonic?

DETAILED RESUME OF STRUCTURE

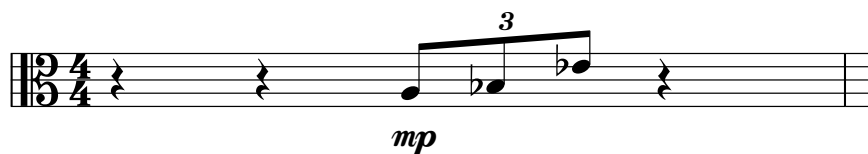
Section 1a (Bars 1-15)

1 - 8

The movement opens with a repeating triplet idea in the viola and later second violin over a rhythmic crochet pedal of C in the cello.

The initial viola rising triplet figure – A-B flat-E flat – outlines the interval of a tritone – an interval that dominates this movement. It is drawn from the opening notes of the aforementioned passage which also features the main intervals here: a semitone and 4th, making up a tritone (see Example 8).

Ex 8: Tritone made up of a 4th and semitone, opening *Natural Bridges*, bar 1



The line rises through a series of 'stop-start' transposed repeats of the triplet and, later at bar 3, a version of it moving by step. The line continues, adding the second violin an octave higher, rising to *f* at the end of bar 5, before falling back and then rising to *ff* at the end of bar 8.

9 - 11

The first violin now enters with a 1-bar continuation with a 6-note figure repeated twice. Note how this figure also covers the range of a tritone. The figure consists of two transpositions of the same 3-note cell (a major and minor 3rd – see Example 9).

Ex 9: Two 3-note cells from bar 9 of Natural Bridges. Each cell contains a major and minor 3rd and the two cells together cover the range of a tritone



This 3-note cell becomes an important element in the harmony of the following section at bar 16.

The pedal point of C in the cello ceases and a chromatic bass now rises and falls through a minor 10th returning to the pedal C an octave higher at bar 12.

The triplet figure from bars 1-8 begins at bar 9 at the highest pitch of intensity. Thereafter the 3-note figure is reduced to a series of descending figures divided between the upper three instruments, constantly transposed in a falling sequence to the end of bar 11.

12 - 15

A return to the opening figure from bars 1-2 divided between violins 1 & 2.

Bars 12-13 are over a pedal note of C and at 14-15 returns to the bass line found at bar 9.

QUESTIONS:

- * Name two rhythmic elements that dominate both the first and subsequent sections of *Natural Bridges*.
- * What important 3-note cells are introduced in this opening section?
- * Give two examples from bars 1-8 as to how the tritone is expressed.
- * What 3-note cell can be found in the opening section which also dominates Section 2a at bars 16-22?
- * What element in bars 1-8 helps to define the tonality in an otherwise chromatic musical language?
- * What particular interval, suggested at the outset, plays an important part in this movement?

Section 2a (Bars 16-24)

16 - 22

A repeated triplet figure in the three lower strings make up a closely-voiced 3-note chord (C-E flat-E) consisting of a major 3rd enclosing a semi-tone (the same 3-note figure heard in violin 1 at bar 9). This moves through 6 transpositions during this passage (see Example 10),

Ex 10: 3-note cell containing a major and minor 3rd shown melodically from bar 9 and harmonically from bar 16 (transposed)



all made up of transpositions of the same three notes (three of these in inversion).

Section 2a (Bars 16-24)

23 - 24

A closing flourish in the two violins harmonised in minor 3rds and tritones, over a pedal point of F. Bar 24 is a varied repeat of 23. Note that the two flourishes outline 2 tritones.

QUESTIONS:

- * What 3-note cell forms the basis for the harmony in the Section 2a (bars 16-22).
- * Does each change of harmony in this section last for the same number of beats or does it change?

Section 1b (Bars 25-31)

<p>25 - 28</p>	<p>A varied repeat of bars 1-3 of Section 1a, now over a moving crochet pedal point of B flat with the triplet figure transposed accordingly.</p>
<p>29 - 31</p>	<p>A varied repeat of bars 9-11 with the triplet figure originally divided between the three upper strings, now transferred to the cello alone and transposed down a tone.</p> <p>The harmony in violins 1 & 2 consists of tritones rising in minor 3rds.</p> <p>The viola part is a very slightly varied repeat of that found in the cello at bars 9-11 (see the second crochet in bars 29).</p>

QUESTIONS:

- * What interval dominates the harmony found in the violins 1 & 2 in bars 29-31?
- * How does the use of dynamics work in this section?

Section 2b (Bars 31-42)

32 - 42

A repeated triplet figure in violin 1, viola and cello (starting at bar 33) make up a closely-voiced 3-note chord in harmonics (C-E flat-E) consisting of a major 3rd enclosing a semi-tone as in the previous Section 2a. This moves through 8 transpositions during this passage. The top line rises and falls in a series of minor and major 3rds.

The register of the passage gradually descends in all instruments. Each change of harmony is organised into different length groups of triplets (3,3,2,4,4,3,4,3,2,3 crochets long).

Violin 2 has a repeated pedal note of B flat through to the first beat of bar 38.

A descending passage in quavers in the cello (made up of alternating minor 3rds and semi-tones) forms a transition to the next section.

QUESTIONS:

- * What is tonality does the previous section and section 2b start in? How is this established?
- * What unusual string playing technique is found in this section?
- * What is the difference between harmonic with a diamond a 4th above the pitch and those with a circle written above them?

Cadenza & Development (Bars 43 - 59)

This passage combines and develops two ideas: the triplet figure outlining a tritone (heard at the outset) and a new rising figure (bars 50-51) related to the melodic top line of bars 32-40

<p>43 - 50</p>	<p>A <i>cadenza</i> for violin 1: four rising flourishes opening with a single repeat of the opening figure from bar 1. This figure (covering the tritone) dominates many, but not all of the subsequent 3-note figures heard in the cadenza.</p>
<p>50 - 59</p>	<p>Introduction of a new rising figure in crochets made up of minor 3rds and harmonised in parallel 5ths (upper parts) but with the line rising in major 3rds in the bass. The triplet figure and rising figure alternate 3 times (bars 50-53, 53-55 & 55-56). Each repeat becoming progressively shorter culminating in the triplet figure heard in all instruments in unison (bars 57-59). The tonality throughout is very unstable.</p>

QUESTIONS:

- * What unusual feature can be found between bars 43-50?
- * What two types of material can be found in section between bars 43-59?
- * How is the sense of tension built up in the section from bars 50-59?

Section 1c (Bars 60 - 74)

This section has a sense of recapitulating of Section 1 and making a direct reference to the Beethoven.

60 - 64	<p>Pedal note of C as at outset</p> <p>A repeated triplet figure outlines the intervallic cell from bar 1 (at same pitch), with analogous transpositions. The statement of this as a repeated triplet figure also references the texture of Section 2.</p>
65 - 71	<p>The first direct reference to the Beethoven passage from which this movement is drawn. A passage in crochets directly quote bars 70-72 of the Beethoven, heard 3 times in C (bars 65-67), B flat (67-69) and then an altered chromatic version in minor 3^{rds} (bars 69-71).</p>
71 - 74	<p>C# pedal in upper strings with the triplet from Section 1 in the lower strings, also transposed up by a semitone.</p>

QUESTIONS:

- * What material is heard for the first time in this section?
- * What is the difference between the way in which the triplet figure is presented initially in bar 1 and now in bar 61 (and thereafter)?
- * How does the composer subtly suggest an idea from Section 2 in this section?

Section 2c (Bars 74 - 80)

74 - 80

An E flat pedal is heard in the cello with repeated triplet figure as at bar 16 in the upper strings, but now outlining the intervallic cell from bar 1 (now on C), with analogous transpositions.

QUESTIONS:

- * What is the difference between the chord used as the basis for the harmony in this section and that used originally in bars 16-22?
- * What is the difference between the use of register and dynamics in this section and that at bars 16-22?

CODA (Bars 81 - 93)

This section has a sense of recapitulating of Section 1 and making a direct reference to the Beethoven.

81 - 83	A return to the Section 1 triplet, extended and rising in a full unison.
83	A repeated triplet in unison on C (referencing Section 2).
84 - 89	An exact repeat of the “Beethoven crochets” as heard in bars 65-71.
90 - 92	A return to the Section 1 triplet, extended and rising.
92 - 93	A final reference to opening of movement 1, closing on a unison C.

QUESTIONS:

- * What material can be found in the *coda* that does not appear anywhere else in *Natural Bridges*?
- * What four different types of material does the *coda* draw on?

TONALITY

The key centres might be shown thus:

Section	Section	Section	Section	Development	Section	Section	Coda
1a	2a	1b	2b	No Fixed tonal centre	1c	2c	Initially unstable.
C	Unstable	B flat	G minor		C	E flat	Ending in C

TEXTURE AND SONORITY

As in *Boardwalk*, *Natural Bridges* uses the string quartet as Beethoven might have found it. There are three or four distinct textures that make up its character which are discussed below.

- Much use is made throughout of pedal notes, usually in the cello, but occasionally in inner parts (see bars 70-74). These provide a tonal focus in a movement that is often highly chromatic and unsettled in its tonality.
- Triplet figures are crucial to and dominate this movement, both expressed melodically (as in Sections 1a, b and the development) or as a repeated note figure (as found in Sections 2a, b, c and 1c).
- The frenetic activity of the movement overall is relieved briefly at the beginning of the central “development” section where the first violin has a *cadenza*. This is not unusual in the context of a string quartet, and can be found occasionally in Beethoven’s Quartets (for instance, Op.131 or 132).

HARMONIC LANGUAGE

The use of both harmony and melody (through the use of intervals) are quite different in this movement to the way they are used in *Boardwalk*. More details are given below.

- The use of intervals is very important melodically in this movement. The 3-note figure that opens the section has already been discussed (see “Details Resume} of Structure”), but the figurations that follow are also related to the same material. For instance, the 6-note figure at beats 3 & 4 of bar 3 and at the same point in bars 4-5 also cover the interval of a tritone, rising up and back down through that interval.
- Besides the tritone, the other important interval used is the 3rd (both major and minor). This and the tritone often make up the harmony in this movement.
- The first real harmony to appear comes at bar 16-24 where all the 3-part chords are made up from a semitone and third (ie. C – E flat – E). The same corresponding passage at bars 33-40 are made up of similar chords as is the harmonisation of the Beethoven quote between bars 65-71 and 84-89.
- A more complex example is in bars 24-25 where the upper two violins play the same line, initially in minor 3rds and then tritones. The viola underneath it double stops in minor 3rds (F# – A) and then tritones (E flat – A). In the bass is a pedal F. It will be seen that all these three elements tend to move independently of one another.
- Another example of this is at bars 29-31 which is made up of three independent elements: tritones in the violins, a single line in the viola and another independent line in the cello.
- A different kind of chord is found at bars 50-51 consisting of an open 5ths enfolding a minor or major 2nd.

TEMPO, METRE & RHYTHM

TEMPO

The tempo for *Natural Bridges* is *crochet* = 168, which is the same speed as Beethoven's original marking of *minim* = 84 (though not, of course, *Alla breve*).

METRE

The syncopations that were so important in the first movement are scarcely present in *Natural Bridges*. Instead this has a sharply defined *crochet* pulse running through most of its sections allied to triplet movement which varies from regular to irregular.

Sometimes an irregular harmonic rhythm can be felt across the barlines as in bars 16-22 or 33-40 where varied groups of 2, 3 or 4 beats on different harmonies are heard.

Bar / Phrase Structure

The phrase structure in the *Natural Bridges* is different to that found in *Boardwalk*. Much of the texture is made up of figuration made up from the initial triplet figure, often fragmented or falling into one or two-bar phrases (or less).

DYNAMICS

Most sections of *Natural Bridges* tend towards a similar pattern of dynamics, often quiet at the opening of a section and building towards an *f* or *ff* towards the end, before returning to low dynamic for the next section. A typical example might be Section 1b (bars 25-31) which starts *p*, rising to *mf* at bar 28 and *ff* at bar 30 followed by a rapid diminuendo to *p* for the beginning of the next section at bar 32.

DEFINITIONS

CELL: This is a term sometimes used to describe a group of any number of notes (a 3-note cell might be, say, A – B flat – E flat), particularly when they are used as a motif that can be transposed or used to build longer melodies.

FUNCTIONAL HARMONY: This is harmony that observes and obeys all the academic rules of harmony as distinct from, say Debussy, Stravinsky, Schoenberg and others who have invented their own harmonic style and individual set of rules. It is called “functional” harmony because each chord has a clearly defined function in building up phrase structures and modulations to other keys.

HARMONICS: These are high notes that can be played on all string instruments. They have a different ethereal quality from the same notes played normally (for instance, playing very high on the E string of the violin or A string of the cello). They are achieved by lightly touching the string at a certain interval above that being played. There are many ways of doing this, but, for instance, if a violinist playing on the G string plays an A whilst touching the E a 4th above, it will produce an A two octaves higher.

OCTAVE DISPLACEMENT: This is where a note in a stepwise sequence (say, C – D – E) is moved up or down by an octave to produce wide and expressive leaps – for instance, in the sequence above the D might drop by a 7th, producing a leap up again by a 9th to reach the E.

TRITONE: This is the interval of the augmented 4th (say, A to E flat). It is used a lot by twentieth century and contemporary composers for its dramatic effect. In traditional music and harmony, it was avoided, being the most distant interval in terms of the keys between, say, A major and E flat major. In medieval times it was prohibited and called “diabolus in musica” or “the devil in music”.

RESOURCES

CD:	Emperor String Quartet. BIS –CD-1511 (also available on Spotify)
WEBSITE:	www.sallybeamish.com
RADIO FEATURE:	Composer of the Week, BBC Radio 3. A survey of her work and interviews. www.bbc.co.uk/programmes/p021l9sk
BOARDWALK, SANTA CRUZ, CALIFORNIA:	http://beachboardwalk.com
NATURAL BRIDGES, CALIFORNIA	http://alltrails.com/trail/us/california/the-upper-natural-bridge-trail-of-calaveras-county

INTERACTIVE ELEMENTS

- * Use extracts from BIS Emperor String Quartet CD as specified
- * Demonstrate harmonic / rhythmic background via Sibelius samples
- * Provide hyperlinks to websites to give further information on names and words used in the body of the text