

Many Engineers and Architects are astounded at the lengths Cintel will go to install long anchors over 105Ft [32m] .

Attached are a few examples: -

PRINCE'S GATE TORONTO CANADA 34Ft [10.3m]

THE LIBRARY OF PARLIAMENT. OTTAWA. CANADA 37Ft [10.8m]

STONELEIGH ABBEY UK 72Ft [22m]

BAKU CHIMNEY RESTORATION AZWERBAIJAN 78Ft [24m]

THE EUROPEAN PARLIAMENT.ATHENS. GREECE. 95Ft[29m]

CHRIST CHURCHCATERDRAL.NEWCASTE.AUSTRALIA.

Over 2.36 miles[3.8KM]of drilling was carried out

ANCHOR LENGTHS up to. 105Ft [32m] were installed

THE RED HOUSE.PARLIAMENT BUILDING.

TRINIDAD & TOBAGO. 125Ft[38m]

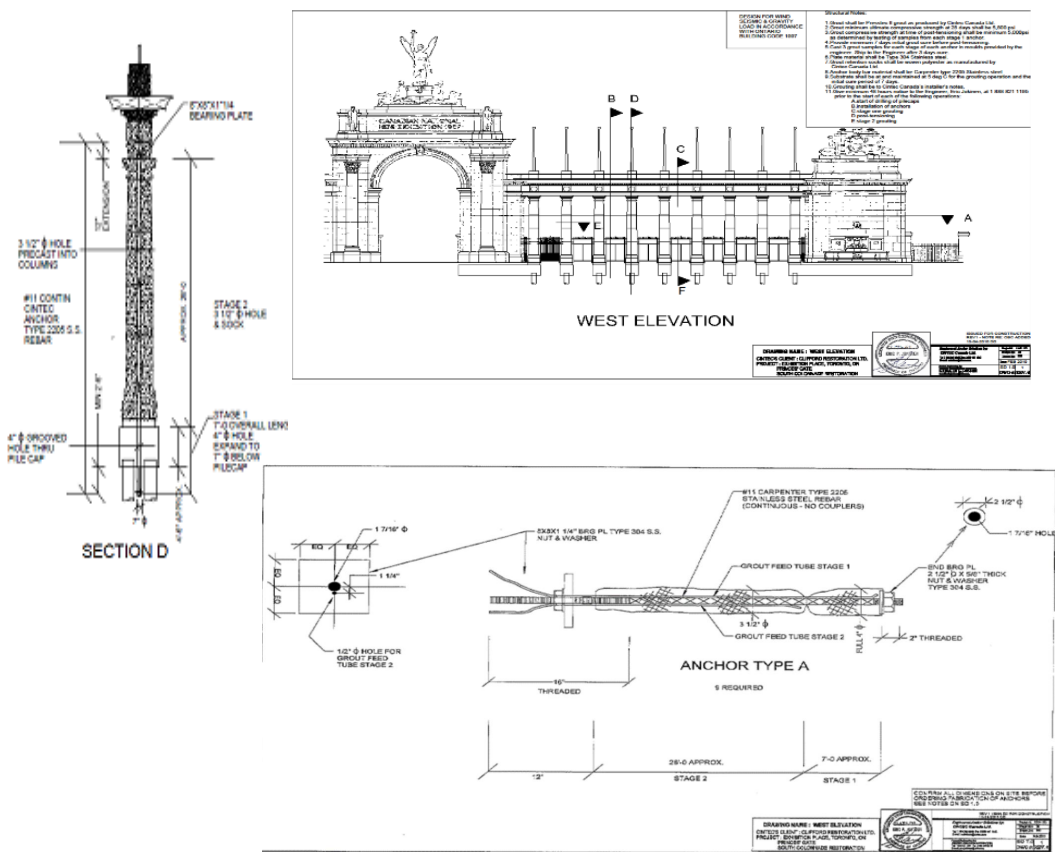
CASE HISTORIES WHERE AVAILABLE CAN BE FOUND AT WWW.CINTEC.COM

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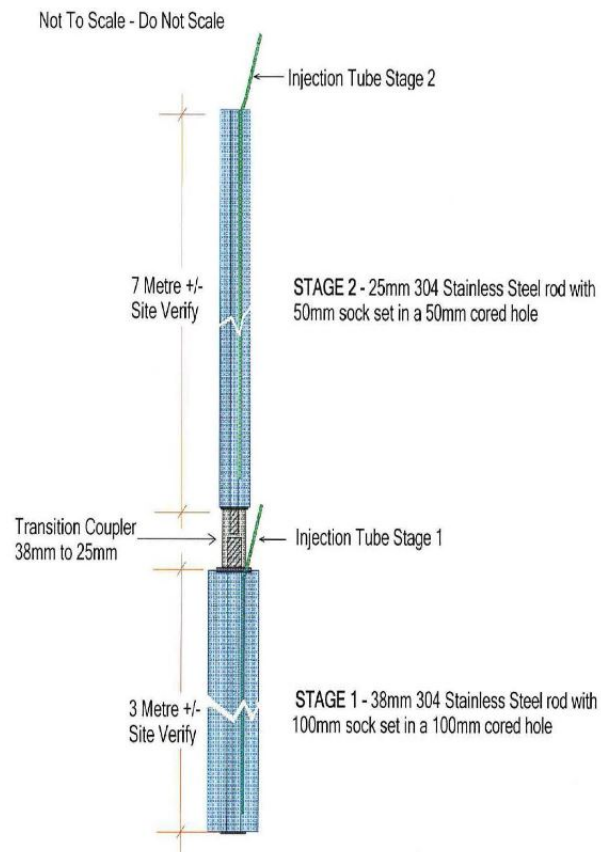
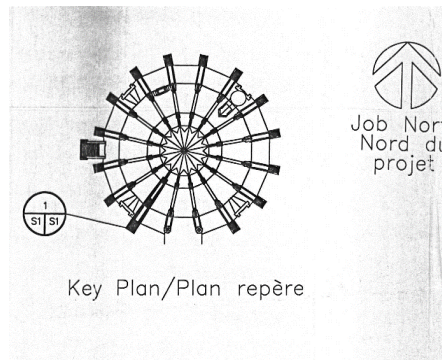
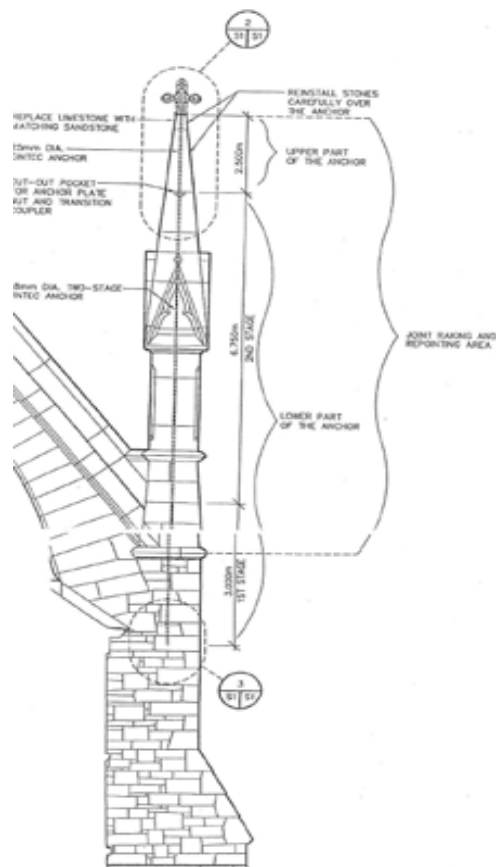
Prince's Gate, Toronto, Ontario, Canada



The gates are made of a mix of stone and concrete. There are nine pillars to either side of the main arch, representing the nine Canadian provinces in existence at the time of construction. Each column consists of several, tapering, annular rings stacked to a height of 27 feet and sit on a concrete pile cap some 7 feet thick. The project required an anchor that would extend the full depth of the column and pile cap, mechanically and adhesively tie all components together and allow post tensioning load of 25,000 pounds per column. Two stage anchors, 35 feet long were fabricated by Cintec, each comprising #9 carpenter stainless steel, 4" diameter polyester Cintec sock for the 7 foot first stage and 3 1/2" diameter sock for the second stage. The anchors were carefully lowered into place by crane and the first stage inflated using Cintec Presstec® grout. After 7 days, tension load of 25,00 lbs. was applied, bearing plate secured and the second (27 foot) stage was inflated.

THE LIBRARY OF PARLIAMENT OTTAWA CANADA [THE ONLY PART TO SURVIVE THE FIRE OF FEB 3 1916 [it is thanks in large part to the first Parliamentary Librarian, **Alpheus Todd**, that the Library was preserved from the fire that destroyed Canada's main parliament building on February 3, 1916. He suggested to the building's architects that a hallway and fireproof iron doors separate the Library from Centre Block.]

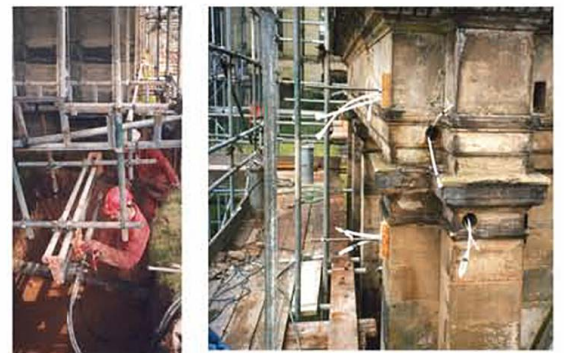
THE REINFORCEMENT & STABILISATION OF THE BUTRESS & PINNACLES WITH 2 stage post tensioned Cintec Reinforcement Anchors up to 35.5 Ft [10.8m] long



STONELEIGH ABBEY [The Orangery], Kenilworth, U.K



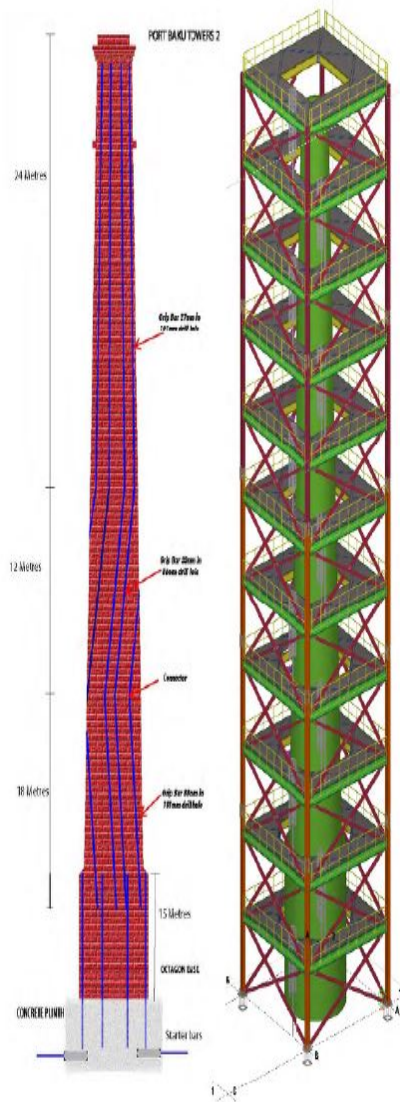
Stoneleigh Abbey's orangery had broken its back both on the short and long sides of the building, which measured some 22 meters [72Ft] by 9 meters [29.5Ft] the settlement being caused primarily through inadequate rainwater disposal. The cost of rebuilding the defective parts of the structure would have been enormous. It was therefore decided to keep the deformation in the structure but to stabilize it. The project Engineers, determined to use pre-tensioned Cintec anchors at foundation level and cornice level to hold the curtain walling together. One row of anchors were installed around three sides of the building at foundation level and two rows around all four sides at cornice level. The wall consisted of two skins of ashlar back to back with an irregular void running down the length of the wall. The anchors consisted of 16mm [1/2"] stainless deformed bar in a 76mm [3"] dia hole, the 22 meter [72Ft] long ones being in 2 Number 11 meter [11Ft] lengths connected onsite and pumped from both ends. Once in place the anchors had temporary end plates attached and were tensioned to 10kN, [2248.1lbf], prior to grouting. When cured the end plates were removed and the cores replaced and made good.



PORT BAKU 2 CHIMNEY RESTORATION AZERBAIJAN



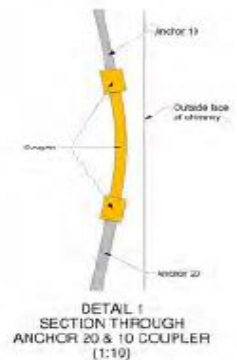
Anchor layout and the tower scaffold which, as well as for access was designed to hold the chimney in the event of a seismic event.



Vertical 24M [78Ft] holes 101 mm [4"] diameter were drilled, angled to suit the outside taper of the chimney.



The 18M [78Ft] and 12M [39Ft] vertically inclined anchors were connected with a cranked section to create a continuous anchor.



Precise set up of drilling rig on side of chimney was required. Using digital levels. Lasers within the barrel ensured an accurate entry point for the drill.





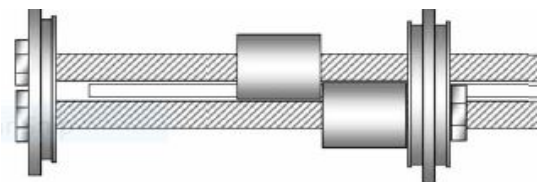
The European Parliament Athens Greece

Restoration following the Earthquake September 1999

1" [25mm] ribbed anchors at each floor level were installed, to form an internal reinforcing steel frame work. The Cintec socked system prevented grout penetrating the building through numerous cracks and damaging the ornately decorated walls and ceilings. The Cintec anchors were assembled on site in sections, to achieve lengths of 95ft [29m]



Anchor positions were carefully marked out and drilled with extreme precision to avoid intersecting anchors



Christ Church Cathedral

Inserting one of the long anchors by crane. Internal pillar showing Cut out to expose Cintec Anchor in the middle of the pillar. The Plaque reads "CHRIST CHURCH CATHEDRAL SUFFERED SEVERE STRUCTURAL DAMAGE IN THE 1989 NEWCASTLE EARTHQUAKE. IN VIEW OF THE VARIETY OF CONSTRUCTION STYLES AND THE HERITAGE CLASSIFICATION OF THE CATHEDRAL. THE INSURANCE CLAIM AND REPAIR OF THE BUILDING PROVED COMPLEX. TO RESOLVE THE COMPLEXITIES ATTACHING TO THE CLAIM, A WORKING PARTY WAS ESTABLISHED COMPRISING REPRESENTATIVES OF THE ANGLICAN DIOCESE AND THE CATHEDRAL INSURER NZI INSURANCE AUSTRALIA LIMITED. THE DIOCESE WAS REPRESENTED BY MR R.C HANN AND MR P.W. MITCHELLE AND THE INSURER WAS REPRESENTED BY MR A.T. WILSON AND MR C.PATTERSON. THE WORKING PARTY ACTIVELY MANAGED THE REPAIR PROCESS UNTIL THE PROJECT WAS COMPLETED IN EARLY 1997. THE REPAIR PROCESS INCLUDED THE INSTALLATION OF 3.8KM (2.36M) OF CLS CINTEC STAINLESS STEEL MASONRY ANCHOR SYSTEM. AN EXAMPLE OF WHICH IS SHOWN BELOW." Cintec M32 [1 1/4" or 32mm] Dia 316 stainless steel deformed bar at 105 Ft [32m] long.





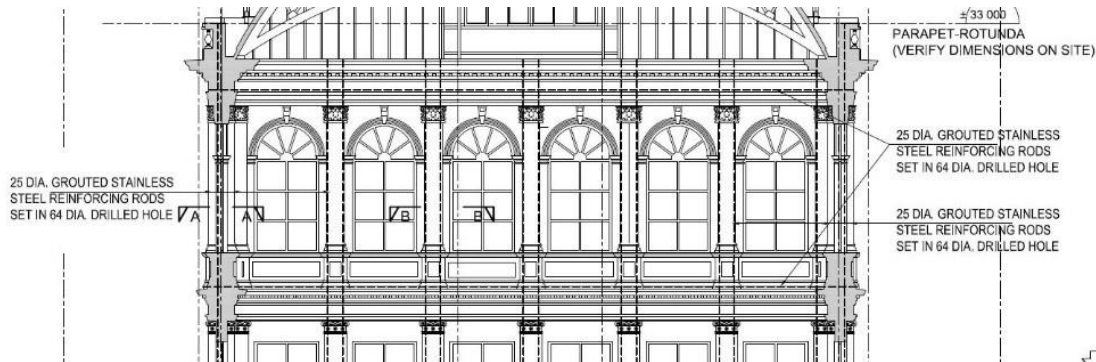
The RED HOUSE, Parliament Buildings, Trinidad & Tobago

Structural Seismic Retrofit



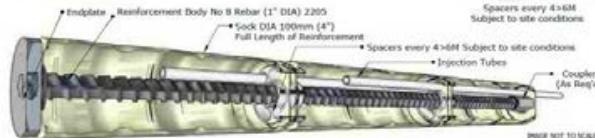
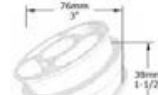
The Red House is the seat of the Parliament for the republic of Trinidad & Tobago. The architectural design is of the Beaux-Arts style. The original building, never completed, was built between 1844 and 1892. Painted Red, hence its name, was severely damaged by fire in March 1903. Rebuilding / Refurbishment started in 1904 on the same site and was opened in 1907. Cintec were asked to provide information to Genivar (now known as W.S.P) and C.E.P as far back as 2007. Strengthening work to the Red House finally started in 2017. Cintec provided additional specialist training and long reinforcement bars to ensure, as far as possible, that there would be no long hole drilling problems on this very important Historic project. These trials determined the positioning of the drill; it was calculated that deliberately pointing the drill up 0.50 degrees should compensate for the force of gravity pulling down the core barrel over 38m/ 125 ft.in length. This proved to be very effective, as the drill exited at the other end of the beam exactly as predicted vertically and only 50mm/1.968inch out on the horizontal. These Long anchors are on the second floor of the building through a beam that is only about 1.0m square. Accuracy is critical: misalignment by one degree would result in the drill exiting the side of the beam within 20m/65.5ft. of the starting point.

On this project for the first time Cintec has used computer 3D printed parts and Cintec's longest anchor to-date, at 120 ft. / 36.52m has been successfully installed



TYPE 1: Cintec No 8 Rebar 2205 (1" Dia) Reinforcement

Location to be determined by the Engineer of Record
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REINFORCEMENT LENGTH TO SUIT SITE CONDITIONS
 Client To Confirm ALL Measurements Before Ordering By Site Inspection

CONTRACTOR

Tekhnatus Technologies Limited
 Advan Singh / Ricky Singh
 566, Piarre & Piarre Road
 San Fernando, Trinidad & Tobago
 1-868-326-4061

DRAWING NAME

The Red House
 The Parliament Building of the
 Government of Trinidad & Tobago

ENGINEER OF RECORD

C.E.P Limited
 Emerson Peters
 67 Tanagerie Road
 Woodbrook, Port of Spain
 Trinidad, West Indies
 1-868-622-7017

Engineered Grout Injection Reinforcement by-

Tel +1-613-225-3381
 Fax +1-613-224-9042
 E-Mail: enquiries@cintec.com

Project # 0272 Prepared by-

Date 21 July 2017



NOTES



CINTEC

REINFORCEMENT SYSTEMS

Tel 1-613-225-3381
1-410-761-0765
Fax 1-613 224-9042

E mail solutions@cintec.com

www.cintec.com

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