

**ND Tests carried out at Children Building (wards) RCC (G+2), MMC
Hospital, Panbazar, Guwahati-1**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Children building(wards) RCC (G+1), MMC Hospital, Panbazar, Guwahati-1

The following Non-Destructive Tests were carried out on 11/06/2015 at certain locations of Children building(wards) RCC (G+1), MMC Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+2), columns and beams are in fair condition. Few cracks are seen to have developed in few columns, beams and walls.

Non Destructive Test:

The non-destructive test results are fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is fair.

Recommendation:

Evaluation by a structural engineer is recommended and few columns and beams need retrofitting.

ND Tests carried out at Children Ward (G+1), K.K. Civil Hospital, Golaghat

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Children ward (G+1), K.K. Civil Hospital, Golaghat.

The following Non-Destructive Tests were carried out on 05/08/2015 at certain locations of Children Ward (G+1), K.K. Civil Hospital, Golaghat in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), the building seems to be in fair condition. Seepage is observed in some parts of the building.

General observation:

No such development of cracks and damages are observed in the building structure. Seepage is seen and it is depicted in the photographs attached. The building seems to be in fair condition.

Non Destructive Test:

The non-destructive test results are satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is satisfactory. The building seems to be in fair condition as no such cracks and damages were observed.

Recommendation:

Regular maintenance of the building is recommended.

ND Tests carried out at 200 bedded Dhubri Civil Hospital, Dhubri

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at 200 bedded Dhubri Civil Hospital, Dhubri.

The following Non-Destructive Tests were carried out on 08/07/2015 at certain locations of 200 bedded Dhubri Civil Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+2), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams are in bad shape.

Beam no. GF-4-A/B shows cracks.

Beam no. GF-4/5-H shows over all crack in the beam. This beam has developed multiple cracks and is in bad shape.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

ND Tests carried out at Drug Testing Laboratory in GAC, Jalukbari,
Guwahati-14

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Drug Testing Laboratory in GAC, Jalukbari, Guwahati-14.

The following Non-Destructive Tests were carried out on 15/06/2015 at certain locations of Drug Testing Laboratory in GAC in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), the columns and beams are in fair condition. Seepages from few portions is noticed.

Column no. AY-DTL-GF-10-C and AY-DTL-GF-9-D shows low UPV results.

Non Destructive Test:

The non-destructive test results are fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure fair.

Recommendation:

Evaluation by a structural engineer is suggested. Few parts of the structure requires retrofitting works.

**ND Tests carried out at Emergency Block (G+3), 1000 bedded GMC Hospital
RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Emergency block (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 14/05/2015 at certain locations of Emergency block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. E-1-A/B (FF) shows cracks and low UPV results.

Column no. E-11-B , E-12-Bshows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Emergency block (admin.)/old/part II, 1000 bedded
GMC Hospital RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Emergency block (admin.)/old/part II, 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 19/05/2015 at certain locations of Emergency block (admin.)/old/part II, 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building ground floor, most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab and column was also observed. Reinforcement becomes visible in some of the portions.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams, and these are depicted in the photographs attached.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. GE-4-A/B shows cracks and low UPV results.

Column no. GE-1-C , GE-3-B , shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Emergency part II (old) (G+3), 1000 bedded GMC
Hospital RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Emergency part II (old) (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 20/05/2015 at certain locations of Emergency part II (old) (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. GE-5-A/B , GE-7-B/A , GE-11-A/B , F2-E-9-C/B shows cracks and low UPV results.

Column no. GE-8-C , GE-10-C , F2-E-6-C , F2-E-9-C shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Eye Block (G+3), 1000 bedded GMC Hospital RCC at
Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Eye block (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 29/05/2015 at certain locations of Eye block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are shown in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. FF-EY-6/7-B shows cracks and low UPV results.

Column no. FF-EY-6-C is completely wet due to seepage.

Column no. GF-EY-11-B shows cracks and low UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Faculty Block (G+3), 1000 bedded GMC Hospital
RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Faculty block (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 27/05/2015 at certain locations of Faculty block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. F3-ACD-2-B/A , F3-ACD-7-A/B shows cracks and low UPV results.

Column no. GF/AD-1-A , GF/AD.AC-6-A/B , F2-ACD-11-A shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at GNM School Building RCC(GF only), MMC Hospital,
Panbazar, Guwahati-1**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at GNM School building RCC (GF only), MMC Hospital, Panbazar, Guwahati-1

The following Non-Destructive Tests were carried out on 12/06/2015 at certain locations of GNM School building RCC (GF only), MMC Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (GF only), most of the columns and beams show development of cracks. From the test it was also observed that most parts of the building have become porous.

General observation:

Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached.

Beam no. GF-GNMS-1/2-C, GF-GNMS-1/2-D, GF-GNMS-3/4-C shows poor UPV results and cracks are also seen.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at G.N.M. Training Centre (G+1), K.K. Civil Hospital,
Golaghat**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at G.N.M. Training Centre (G+1), K.K. Civil Hospital, Golaghat.

The following Non-Destructive Tests were carried out on 05/08/2015 – 06/08/2015 at certain locations of G.N.M. Training Centre (G+1), K.K. Civil Hospital, Golaghat in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), crack was observed in one of the column. Seepage in the slab was also observed in the building.

General observation:

There is no such major cracks and damages in the building apart from a single crack in one of the column which is located outside portion (front) of the building. Leakage in one of the slab was also observed.

Specially, below mentioned column is in bad shape.

Column no. KKCH-GNMTC-GF-2-F shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is satisfactory. The cracks indicate that the column is distressed.

Recommendation:

Evaluation by a structural engineer is recommended. Roof treatment for the damaged slab is recommended along with retrofitting work for the damaged column.

**ND Tests carried out at G.N.M. Training Centre Hostel (G+1), K.K. Civil
Hospital, Golaghat**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at G.N.M. Training Centre Hostel (G+1), K.K. Civil Hospital, Golaghat.

The following Non-Destructive Tests were carried out on 06/08/2015 at certain locations of G.N.M. Training Centre Hostel (G+1), K.K. Civil Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Severe seepage is seen in most parts of the building. Small plants are observed growing in the building structure.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in slabs, columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, below mentioned beam is in bad shape.

Beam no. KKCH-FF-25/26-A shows cracks.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is distressed. It is also observed that the major damage is due to severe seepage in the building structure. It was also observed that there is lack of regular maintenance.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis along with building maintenance.

**ND Tests carried out at Gynaecology Block (G+3), 1000 bedded GMC
Hospital RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Gynaecology block (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 21/05/2015 at certain locations of Gynaecology block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. F3-GN/CR-13-A/B shows cracks and is in bad shape.

Column no. GF/GN-7-B , GF/GN-14-C , FF-GN-1-B, FF-GN-13-B , FF-GN-14-B , F2-GN/NS-16-B , F2-GN/NS-19-B , F2-GN/NS-19-C , F2-GN/NS-19-A shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

ND Tests carried out at I.P.D. Block-I, G+1 at S.M.K. Civil Hospital, Nalbari

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at I.P.D. Block-I, G+1 at S.M.K. Civil Hospital, Nalbari.

The following Non-Destructive Tests were carried out on 18/06/2015 – 19/06/2015 at certain locations of I.P.D. Block-I, G+1 at S.M.K. Civil Hospital, Nalbari, in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. IPD(M)-FF-6-C/D, IPD(G)-GF-10/9-C, IPD(BB)-GF-12-B/C, IPD-FF-4-C/D(P2), IPD-FF-8-C/B(P2), IPD-FF-6-B/C(P2) shows cracks and low UPV results.

Column no. IPD(G)-GF-8-A, IPD-FF-9-D(P2) shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Joint Director Office (G+1) and (G+2), K.K. Civil
Hospital, Golaghat**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Joint Director Office (G+1) and (G+2), K.K. Civil Hospital, Golaghat.

The following Non-Destructive Tests were carried out on 05/08/2015 at certain locations of Joint Director Office (G+1) and (G+2), K.K. Civil Hospital, Golaghat in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1) and (G+2), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Severe seepage is seen in most parts of the buildings. Small plants are spotted in damp areas of the structures.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed. Severe seepage in the building structure is the main reason for the damaged concrete. It is observed that there is lack of building maintenance.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works. Removal of the plants from the building structure is also recommended.

ND Tests carried out at Civil Hospital Main Building (G+1), Jorhat

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Civil Hospital Main Building (G+1), Jorhat.

The following Non-Destructive Tests were carried out on 03/08/2015 – 04/08/2015 at certain locations of Civil Hospital Main Building (G+1), Jorhat in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beams are very porous. Severe leakage is seen all over the building. Small plant growths in the building structure is also observed. Severe seepages are also seen in the building slabs. It is observed that seepage is the major problem in the building.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Most parts of the building has developed cracks. Seepage is seen in almost all slabs, columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed. It is also observed that there is very low maintenance of the building.

Specially, below mentioned beams and columns are in bad shape.

Beam no. JCH-MB-FF-3-G/H shows cracks and low UPV results.

Column no. JCH-MB-GF-10-H, JCH-MB(P3)-FF-4-H, JCH-MB(P3)-GF-2-C, JCH-MB-FF-2-F, JCH-MB-GF-2-Q, JCH-MB-GF-2-F, JCH-MB-GF-2-G, JCH-MB-FF-3-C, JCH-MB-FF-2-C, JCH-MB-FF-4-L, JCH-MB-FF-6-G, JCH-MB-FF-4-G shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed. It can be inferred from the tests and visual inspection that the building condition is not fair and is in bad shape. Seepage is the major reason behind the damages.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis. Roof treatment is also recommended on an urgent basis.

NON-DESTRUCTIVE TEST

**PMRT Building RCC (G+1), GMC Hospital complex at
Dispur, Guwahati-32**

CONDUCTED BY:

MADONA & CO.

Hatigaon Main Road

Opposite L.P. School

Hatigaon, Guwahati-38

**ND Tests carried out at Emergency Building RCC (G+5), GMC Hospital at
Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Emergency Building RCC (G+5), GMC Hospital at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 04/06/2015 – 05/06/2015 at certain locations of Emergency Building RCC (G+5), GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+5), few columns show development of cracks.

General observation:

Few columns have developed cracks.

The beams of the building could not be tested as they were covered by false ceiling.

Beam no. F2-NE-11-B/C has developed crack.

Non Destructive Test:

The non-destructive test results are fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is fair. The cracks indicate that the RCC frame structure is stressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. Some portion requires retrofitting work to be carried out.

ND Tests carried out at RCC (G+2) S.N.C.U. Annex Building (Office and Operation smile) at MMC Hospital, Panbazar, Guwahati-1

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at RCC (G+2) S.N.C.U. Annex Building (Office and Operation Smile) at MMC Hospital, Panbazar, Guwahati-1

The following Non-Destructive Tests were carried out on 11/06/2015 at certain locations of S.N.C.U. Annex Building at MMC Hospital, Panbazar in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+2), most of the columns and beams show development of multiple cracks. From the test also it was observed that some parts of the building are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Some of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached.

Beam no. GF-OOS-3/4-B/C shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

ND Tests carried out at OPD Block (G+1), K.K. Civil Hospital, Golaghat

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at OPD block (G+1), K.K. Civil Hospital, Golaghat.

The following Non-Destructive Tests were carried out on 05/08/2015 at certain locations of OPD block (G+1), K.K. Civil Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of cracks. From the test also it was observed that some of the cross beam are porous. The building seems to be in fair condition apart from few development of cracks and porosity in few parts.

General observation:

Due to seepage the building concrete is damaged at few parts. Few columns and beams have developed cracks. Cracks are seen in some columns and beams, and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, below mentioned beams and columns are in bad shape.

Beam no. KKCH-OPD-GF-2/3-G shows cracks.

Column no. KKCH-OPD-FF-4-B shows cracks.

Non Destructive Test:

The non-destructive test results are fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is fair. The cracks indicate that some parts of the building is distressed.

Recommendation:

Evaluation of a structural engineer is suggested. The structure requires retrofitting and rehabilitation works.

**ND Tests carried out at O.P.D. Block (G+1), 1000 bedded GMC Hospital RCC
at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at O.P.D. Block (G+1), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 30/05/2015 at certain locations of O.P.D. block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection: In visual inspection of the building (G+1), columns and beams are in fair condition. Only there are some seepages from the expansion joints and toilet block areas. Also some seepages from chajjas are observed. That is also due to pipe leakages and tree roots.

Non Destructive Test:

The non-destructive test results are almost fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is fair.

Recommendation:

Building expansion joints and toilet block areas and some portion of roof slab to be treated as early as possible.

**ND Tests carried out at O.T. Block (G+4), 1000 bedded GMC Hospital RCC at
Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at O.T. block (G+4), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 06/06/2015 at certain locations of O.T. block (G+4), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+4), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. FF-OT-13-D/E , F4-OT-4-G/F shows cracks and low UPV results.

Column no. FF-OT-4-B , FF-OT-4-A , FF-OT-3-E shows cracks, seepage and poor UPV results.

In operation theatre, 4th floor slab long crack is spotted.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Pediatric Surgery Building RCC (G+1), GMC Hospital
Complex at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Pediatric Surgery Building RCC (G+1), GMC Hospital at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 31/05/2015 at certain locations of Pediatric Surgery Building RCC (G+1), GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage is also observed from outlet pipes, rain water, drain water pipe, soil pipe, etc.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. GF-PD-2-B/C shows cracks and low UPV results.

Column no. FF-PD-3-D shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Radiology OPD Building RCC (G+2), GMC Hospital at
Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Radiology OPD Building RCC (G+2), GMC Hospital at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 08/06/2015 at certain locations of Radiology OPD Building RCC (G+2), GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+2), columns and beams are in fair condition. Only there are some seepages from the expansion joints and toilet block areas. Also some seepages from chajjas are observed. That is also due to pipe leakages.

Non Destructive Test:

The non-destructive test results are fair. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is fair.

Recommendation:

In some of the columns and beams need retrofitting and expansion joint along with chajjas to be treated.

**ND Tests carried out at ANNEX Block (G+3), 1000 bedded GMC Hospital
RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at ANNEX block (G+3), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 14/05/2015 at certain locations of ANNEX block (G+3), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+3), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. F1-8/9-B , F1-10-B/C , F2-9-A/B , F2-8/9-B ,F2-7-B/C shows cracks and low UPV results.

Column no. F1-10-B , F2-1-B , shows cracks and poor UPV results.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at PMRT Building RCC (G+1), GMC Hospital complex at
Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at PMRT Building RCC (G+1), GMC Hospital at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 13/05/2015 at certain locations of PMRT Building at GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+1), most of the columns show development of multiple cracks. Some of the side beams also have multiple cracks. One of the cross beam have hollow structures. From the test also it was observed that some of the cross beam are very porous.

Some of the Beams are found to have inadequate covering.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure will need major retrofitting and rehabilitation within a short period.

ND Tests carried out at R.N.B. Civil Hospital, Kokrajhar

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at R.N.B. Civil Hospital, Kokrajhar.

The following Non-Destructive Tests were carried out on 09/07/2015 at certain locations of R.N.B. Civil Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. FF-6-J/K , FF-7-E/F shows cracks.

Column no. GF-6-M , GF-6-L , FF-3-M, FF-4-M , FF-5-M shows cracks.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

ND Tests carried out at R.N.B. Civil Hospital, Kokrajhar

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at R.N.B. Civil Hospital, Kokrajhar.

The following Non-Destructive Tests were carried out on 09/07/2015 at certain locations of R.N.B. Civil Hospital in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. FF-6-J/K , FF-7-E/F shows cracks.

Column no. GF-6-M , GF-6-L , FF-3-M, FF-4-M , FF-5-M shows cracks.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.

**ND Tests carried out at Trauma Centre Building (G+2), S.M. Dev Civil
Hospital RCC at Silchar**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

REPORT

Non-Destructive Tests Conducted by Madona & Co. at Trauma Centre Building (G+2), S.M. Dev Civil Hospital RCC at Silchar.

The following Non-Destructive Tests were carried out on 31/08/2015 at certain locations of Trauma Centre Building (G+2), S.M. Dev Civil Hospital RCC at Silchar in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.
3. Corrosion test to evaluate the percentage of corrosion occurred in reinforcements.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. Also cracks were observed in walls. From the test also it was observed that some of the cross beam are very porous. Spilling of concrete from column and beams was also observed. Reinforcement becomes visible in some of the portion. Severe seepage is observed in most parts of the building. Mostly seepage is seen in slabs, beams and also in few columns.

General observation:

The RCC structure has experienced damage in most parts due to severe seepage. Most of the columns and beams have developed cracks. Walls cracks were also noticed in the building. Seepage is seen in some columns, beams and slabs; these are depicted in the photographs attached. Leakage from outlet pipes, rain water, drain water pipe, soil pipe, etc. are also observed. It was observed that the slabs have experienced severe seepage problem.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed. It can be inferred that the building structure has experienced this damage due to seepage.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis. Roof treatment is also suggested.

**ND Tests carried out at Traumatology (G+1), 1000 bedded GMC Hospital
RCC at Dispur, Guwahati-32**

Order No. : CEB/MECH/1/2015/12

Dated Guwahati the 21st April, 2015

R E P O R T

Non-Destructive Tests Conducted by Madona & Co. at Traumatology (G+1), 1000 bedded GMC Hospital RCC at Dispur, Guwahati-32

The following Non-Destructive Tests were carried out on 03/05/2015 at certain locations of Traumatology (G+1), 1000 bedded GMCH in presence of PWD technical staff.

1. Rebound hammer test to evaluate the strength of concrete.
2. Ultrasonic Pulse Velocity test to evaluate the concrete quality.

Visual inspection:

In visual inspection of the building (G+1), most of the columns and beams show development of multiple cracks. From the test also it was observed that some of the columns and beam are very porous. Spilling of concrete from slab, column and beams was also observed. Reinforcement becomes visible in some of the portion.

General observation:

Due to severe leakage and seepages the RCC structure got damaged in most parts of the building. Most of the columns and beams have developed cracks. Seepage is seen in some columns and beams and these are depicted in the photographs attached. Leakage from W.C. block is also observed.

Specially, bellow mentioned beams and columns are in bad shape.

Beam no. GF/TRL-3-F/G shows seepage. Seepage is also seen in the attached wall.

Non Destructive Test:

The non-destructive test results are not satisfactory. The test results are shown at Annexure-I.

(Photograph enclosed)

Inference:

The concrete quality of the structure is not satisfactory. The cracks indicate that the building is highly distressed.

Recommendation:

Urgent evaluation of a structural engineer is suggested. The structure requires major retrofitting and rehabilitation works on an emergency basis.