Trubode

Case Study

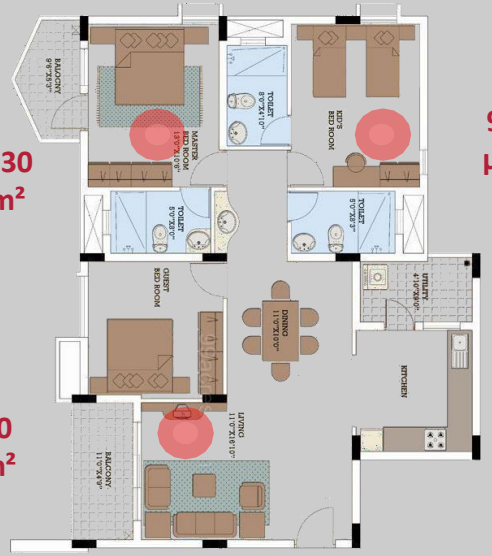
Residence, Nagarujana apartment, marathalli, Bengaluru, Karnataka 560037.

QUALITY ASSURED ISO 9001:2015 CERTIFIED

TÜV INDIA ISO 9001-2015 CERTIFIED

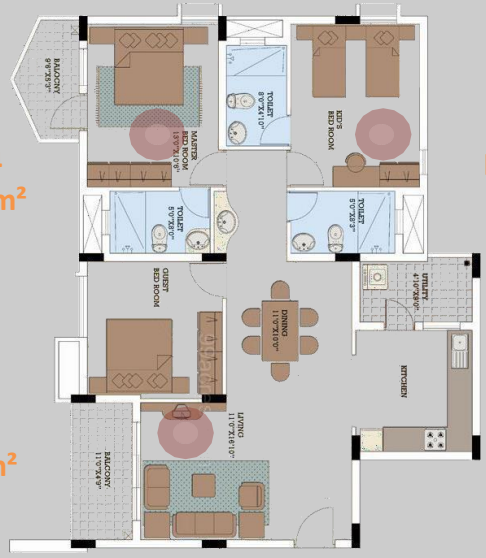
Residential Case Study

BEFORE
trubode Installation



Exposure > 1.2 W/Kg

AFTER
trubode Installation



Exposure < 0.02 W/Kg

99% Reduction

Highly Effective Remediation –Results achieved without compromising connectivity

My children are Tumour free!

*It was one of the hardest times of my life when my kids were diagnosed with **tumour** and I was diagnosed with **auto-immune disorder.***

*It has been over a year since we installed trubode solutions in our house, my kids have became **tumour free**, my **autoimmune disorder is cured!***

- Sarishma T, Mother

Safe Exposure to Radiation **< 0.08 W/Kg** by ICNIRP Standards

Cell Tower Map

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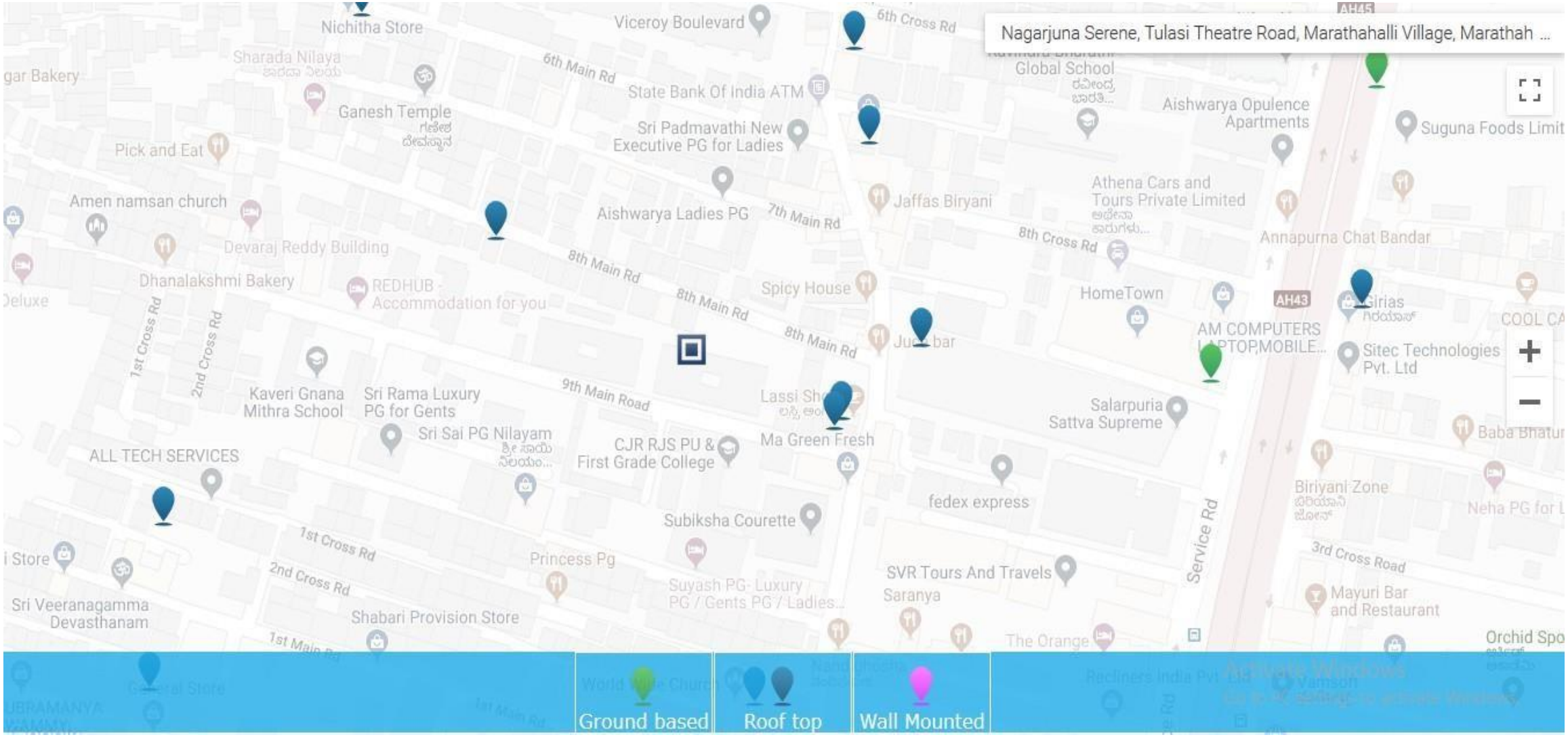

4th Floor EMR Heat Map

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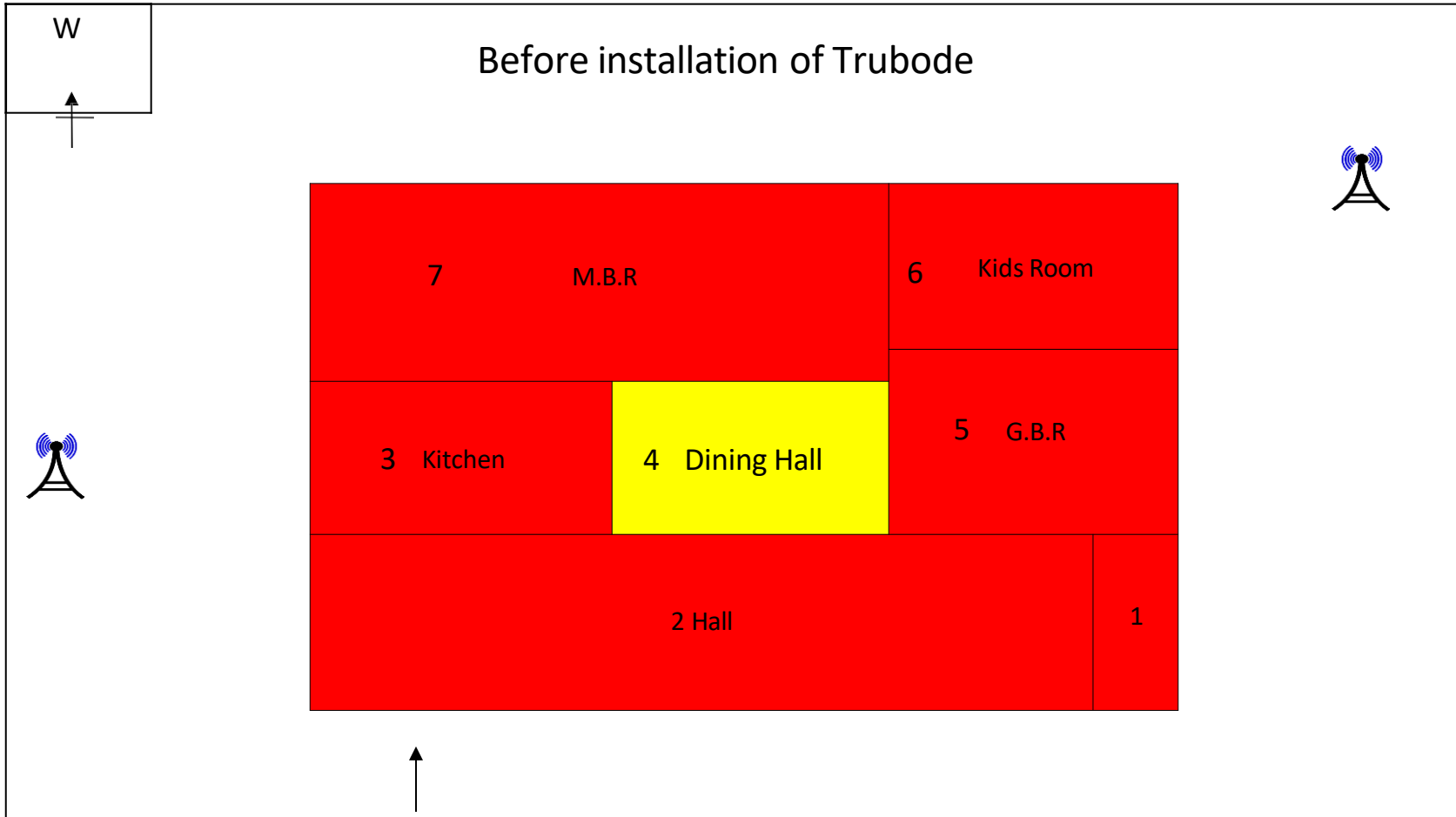

SI No	Location	Max
1	Balcony	112930
2	Hall	5841
3	Kitchen	6493
4	Dining Hall	1048
5	Guest Room	44730
6	Kids Room	96550
7	Master Bed Room	53000

No Concern | Slight Concern | Severe Concern | Cell Tower | Wi-Fi

Observations and Recommendations

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Observations:

- Observed a tower north east side at the distance around 20m and south west side at the distance around 700m of the house audited.
- Observed Wi-Fi router in Guest Bed Room(5) under the table.
- The CTR Reading is observed to be **moderately high** in Balcony (1) and Kitchen (3) of the house.
- The CTR Readings is observed to be **Safe** in Hall (2), Dining Hall (4), Guest Room (5), Kids Room (6) and Master Bed Room (7) of the house.
- EM Radiation levels in the range of 10 - 1000µW/m^2 can be considered as Safe.

Recommendations:

- Wall area of the Balcony(1),Hall(2),Kitchen(3).Guest Bed Room(5),Kids Room(6) and Master Bed Room(7) of the house needs to be secured with Vibrant Coating.
- Window area of the Balcony(1),Hall(2),Kitchen(3).Guest Bed Room(5),Kids Room(6) and Master Bed Room(7) of the house needs to be secured with Anti-radiation Mesh and anti-radiation Film.

Installations Completed as recommended.

4th Floor EMR Heat Map

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After installation of Trubode

SI No	Location	Max
1	Balcony	1284
2	Hall	843
3	Kitchen	1334
4	Dining Hall	406
5	Guest Room	998
6	Kids Room	927
7	Master Bed Room	829

No Concern | Slight Concern | Severe Concern | Cell Tower | Wi-Fi

Contd...

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Please find below the cumulative Radio Frequency radiation readings of the spectrum from 800MHz to 2.5 GHz
Readings taken on 26th July 2019, 09:05 AM All readings in µW/M²
Post Installation readings taken on 19th December 2019, 10:30 AM

SI No	Location	Max	Avg.	Max Avg.	X	Y	Z	Time	% of reduction
4	Dining Hall (pre installation)	1048	511	1026	355	724	679	2:00	
	Dining Hall (post installation)	406	39.11	365	82	286	275	1:00	61%
5	Guest Room (pre installation)	44730	14805	39300	5816	32870	29770	2:00	
	Guest Room (post installation)	998	379	800	210	475	254	1:00	97%
6	Kids Room (pre installation)	96550	10435	78470	25290	71660	59480	2:00	
	Kids Room (post installation)	927	669	936	291	828	1029	1:00	99%
7	Master Bed Room (pre installation)	53000	4300	43856	4768	3859	36010	2:00	
	Master Bed Room (post installation)	829	570	838	350	560	881	1:00	98%

Please Note: The readings were reported as observed on specified day and time in the premises audited.

Max allowable Exposure Levels as per ICNIRP

(International Commission on Non-Ionizing Radiation Protection, icnirp.org)

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Table 4. Basic restrictions for time varying electric and magnetic fields for frequencies up to 10 GHz.[a]

Exposure characteristics	Frequency range	Current density for head and trunk (mA m^{-2}) (rms)	Whole-body average SAR (W kg^{-1})	Localized SAR (head and trunk) (W kg^{-1})	Localized SAR (limbs) (W kg^{-1})
Occupational exposure	up to 1 Hz	40	—	—	—
	1–4 Hz	40/*f*	—	—	—
	4 Hz–1 kHz	10	—	—	—
	1–100 kHz	*f*/100	—	—	—
	100 kHz–10 MHz	*f*/100	0.4	10	20
	10 MHz–10 GHz	—	0.4	10	20
General public exposure	up to 1 Hz	8	—	—	—
	1–4 Hz	8/*f*	—	—	—
	4 Hz–1 kHz	2	—	—	—
	1–100 kHz	*f*/500	—	—	—
	100 kHz–10 MHz	*f*/500	0.08	2	4
	10 MHz–10 GHz	—	0.08	2	4

[a] Note:

1. *f* is the frequency in hertz.
2. Because of electrical inhomogeneity of the body, current densities should be averaged over a cross-section of 1 cm^2 perpendicular to the current direction.
3. For frequencies up to 100 kHz, peak current density values can be obtained by multiplying the rms value by $\sqrt{2}$ (~1.414). For pulses of duration t_p the equivalent frequency to apply in the basic restrictions should be calculated as $f = 1/(2t_p)$.
4. For frequencies up to 100 kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.
5. All SAR values are to be averaged over any 6-min period.
6. Localized SAR averaging mass is any 10 g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure.
7. For pulses of duration t_p the equivalent frequency to apply in the basic restrictions should be calculated as $f = 1/(2t_p)$. Additionally, for pulsed exposures in the frequency range 0.3 to 10 GHz and for localized exposure of the head, in order to limit or avoid auditory effects caused by thermoelastic expansion, an additional basic restriction is recommended. This is that the SA should not exceed 10 mJ kg^{-1} for workers and 2mJ kg^{-1} for the general public, averaged over 10 g tissue.

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95431 95431

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